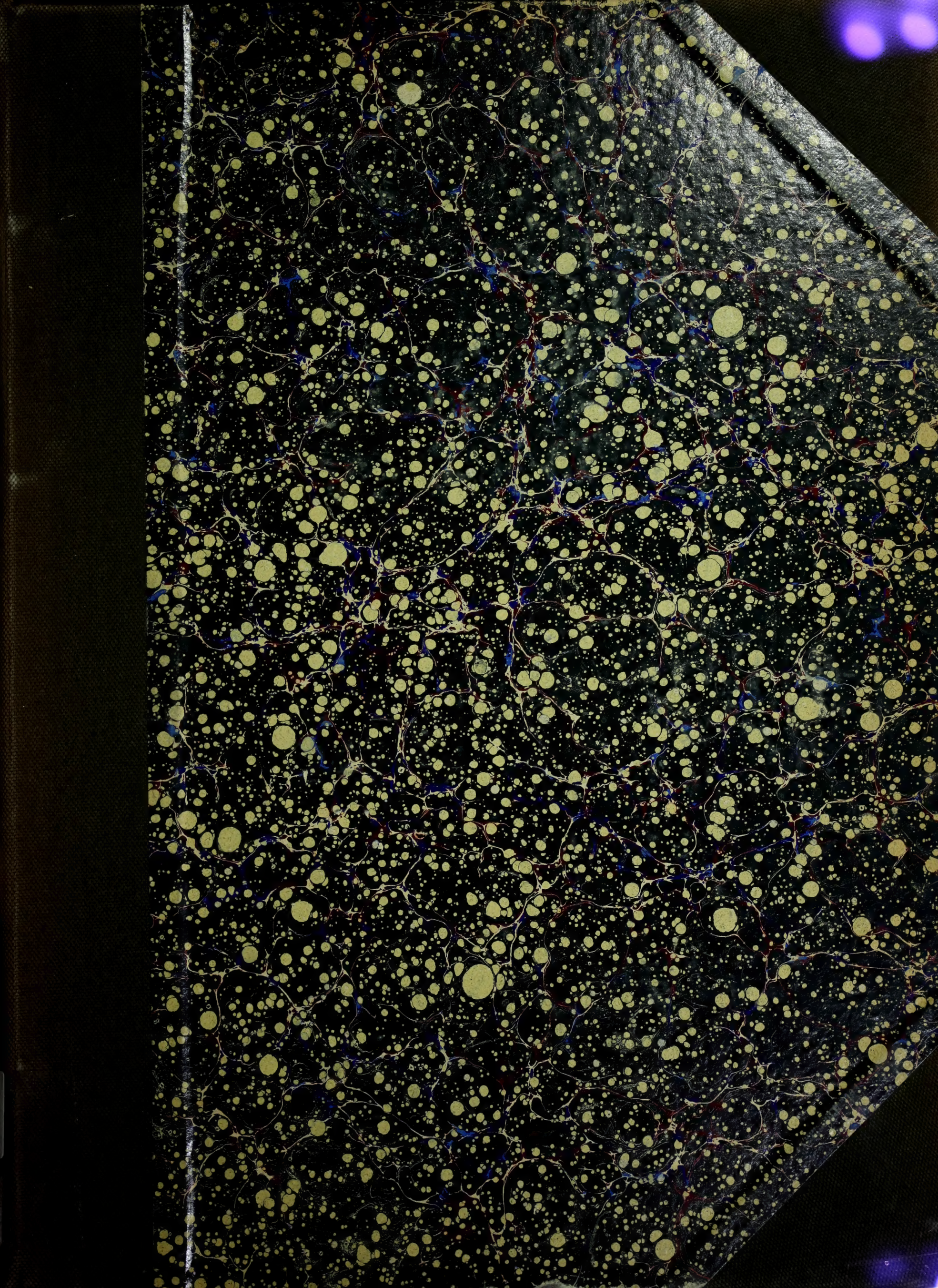




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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 1.

SAN FRANCISCO, SATURDAY, JANUARY 3, 1914.

Forty-Fourth Year

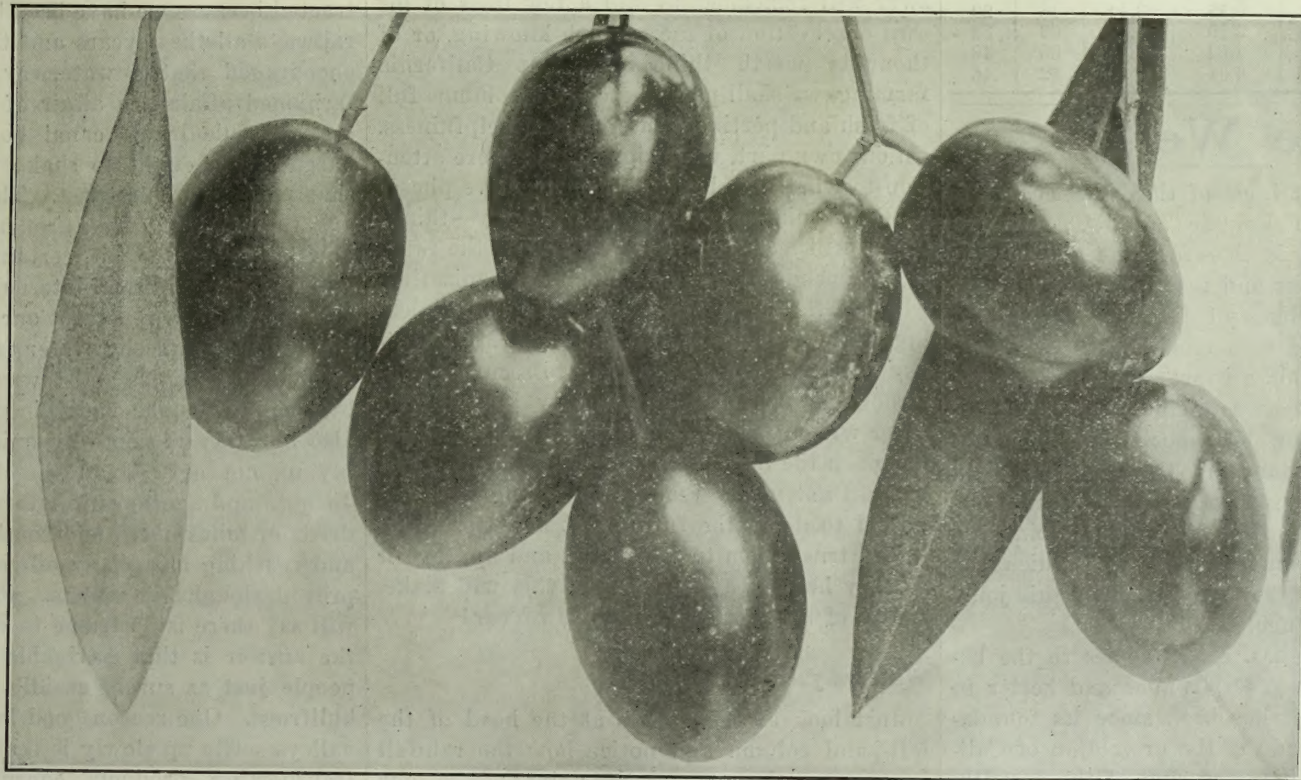
The Attractive and Fickle Olive.

[BY THE ASSOCIATE EDITOR.]

Dame olivia has proved so attractive the last year or so that she has a long train of ardent admirers, but so fickle is she in certain ways that it is difficult to tell just where one stands in her good graces. Other fruits are going along in staid sober way, paying either fair profits, attractive profits, or perhaps what are hardly profits at all. The olive is giving outlandishly large returns and causing considerable excitement in the process. A couple of years ago prices got good enough to start a scramble to plant more olives and when the scramble was well on prices jumped nearly double and seem to be still going up. The cause of olive popularity then is clear, but the

Even the pickling process is something concerning which we have much to learn. We can prepare many olives as good in every way as could be desired. Other olives are either picked too green or too ripe, or in the course of manufacture lose too much of their oil, or for some reason or other resemble fairly edible sawdust in flavor. There are, of course, pickling receipts satisfactory for home use that are not altogether satisfactory for commercial work. Some manufacturers claim to have solved the commercial process completely, others frankly admit they have not, but if one has, others soon will and the outlook is at least bright from the manufacturing quarter. And since the ripe pickled olive boom started when we knew less than we know now, it can come up to full expectations on present methods. Changes can only better conditions.

Growing Problems.—Certain things about olive production we



Sevillano Olive as Grown in Corning, Tehama County.

business in many ways is rather uncertain in growing, manufacture and marketing.

The Basis of Popularity.—The ripe olive is the basis for the renewed interest in the fruit. Oil is a prop to fall back on when for size, quality or other reason the olives will not do for pickling, and making green pickles such as we import from Spain is a possibility which needs no attention while profits are as good as they promise to be for a long time hence.

We have long known how to pickle ripe olives for home use or local markets, but the ripe pickled olive for general markets is a new thing and the way the product is attracting favor among the very few who have as yet become acquainted with it opens almost unlimited possibilities as to prices and extent of possible consumption. Two years ago \$100 per ton was a fine price for pickling olives; this year \$140 to \$160 was a standard price, with sales made up to \$200 and for extra fancy fruit \$250 and up. It has been figured that \$60 per ton would let the olive grower off all right, so no wonder olive growers are getting excited.

know well. Others in the line of pruning, fertilization, cultivation and irrigation we are not sure of. Like a shell game, "Now you see it and now you don't." What wins out one time apparently loses another.

Olives can be found doing grandly on sandy soil, adobe, red hog-wallow and everything between; in foothill, valley and coast. Then again, on nearly all kinds of soils and locations they can be found utterly refusing to bear, and some places where they produce well, the quality is inferior. Still again in the right locations they occasionally produce next to nothing for no clear reason, or for good reasons that we might possibly avoid but yet do not seem to be able to.

For definite hindrances to bearing there are heavy winds when the pollen is ripe or at other times. Later on fruit may be injured for pickling from hot winds. Irrigation at the wrong time may delay ripening and make frost injury probable and various other factors enter into the problem.

We are new yet in the olive business and who knows what

(Continued on Page 6.)

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D. J. WHITNEY - - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Dec. 30, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	2.60	12.98	16.63	58	40
Red Bluff	5.04	14.00	9.94	58	34
Sacramento..	1.25	7.16	7.02	58	40
S. Francisco.	1.63	10.80	8.17	60	44
San Jose.....	.78	6.74	6.13	60	36
Fresno.....	1.14	3.69	3.48	56	40
Independ'ce	.08	3.79	3.44	46	20
San L. Obispo	1.52	9.29	5.72	62	38
Los Angeles..	.59	4.64	5.11	68	48
San Diego.....	.31	3.01	3.10	62	46

The Week.

This is the first issue of the New Year and the first also of Volume 77 of the PACIFIC RURAL PRESS. It is therefore the proper moment for reflections and resolutions. Concerning general problems of life and action, we remand each reader to trial by his own conscience, which holds a court admitting neither advocate or prosecutor: strip off and go to it alone! Concerning the special problems involved in the issuance of this publication, a few frank acknowledgments and declarations may be helpful to all of us in maintaining the standard of patronage and service which has been held aloft for so many years by this journal and its clientage.

The PACIFIC RURAL PRESS comes to the beginning of a new year stronger and better in every way than it has been since its foundation. Of its attitude in the promotion of California's greatest industry, and of the breadth, accuracy, and genuineness of its service of the best interests of its individual subscribers, it becomes us not to speak: nor is speech necessary, for current comment throughout the State awards this journal leadership and mastery. It is proper enough to say, however, to those who may not have learned to read the signs of progress and success on the face of a journal, that the year just closed was perhaps the best the PACIFIC RURAL PRESS ever experienced, and that it now stands, in circulation and in business appreciation and patronage, higher than it ever stood before. It is also true, so far as we can judge, that it maintains its leadership over other journals of its class in this State, by a wider margin than ever before—a condition which is due to zealous effort on the part of all who are connected with our work and to the fact that the quality of service rendered wins its own reward in patronage and commendation to others who have patronage to exchange for effective service. It

is certainly a joy to work for such a multitude of capable and influential supporters. Our journal not only leads in its total of actual subscribers, but its list is not a heterogeneous collection of names caught by the various lures of "circulation managers"—including so many whose interest in agricultural production is scant or remote and whose ability to procure improved agencies and materials for their work is unfortunately limited. For these reasons we are particularly proud of our support. Regular readers of the PACIFIC RURAL PRESS are recognized as possessing keenness in appreciation of progressive work and of capability to provide for it.

Our Part in the New Year.

We are arranging that our work in the new year shall be like that in the past—but more abundant. The present volume will have a slight variation in size of page from its predecessors, for greater convenience in handling an increased business. The current issues will also include a greater number of pages. We desire to give more space to direct communication with readers without sacrificing any of the privilege of preaching to them in the way our enlarged group of special writers delights to do. If each reader who proposes a question for us to answer will remember to add a few lines of his own observation of facts worth knowing, or of thoughts worth thinking, about California farming, we shall pack these extra columns full of fresh and pertinent interest and helpfulness. On our own part, we design to give more attention to what may be called constructive phases of California rural life and industry—things which will make for the greatness of the State in commendable promotion and organization, while at the same time broadening and enriching individual effort and success. Mr. Whitney will give part of his time to securing constructive work of this kind, by himself and other writers. He begins this week by putting wings on the notion to see how it will fly. But we will not weary readers by telling what we intend to do in the future. It is better to do it and trust them to find it out and approve it as they have in the past: and this will make, for all of us, another Happy New Year!

Waterways and Workways.

Just look at the figures at the head of the left-hand column and notice how the rainfall is passing the normal at point where our largest local rivers flow. We do not refer to the Colorado, for that is a Rocky Mountain product, and California is fortunate to sit beside it to bathe her hot feet in its cooling flood. Otherwise California is fortunate in owning her own streams from top to tide and unfortunate in not making any adequate use of them. It should be remembered, first, that California's normal rainfall is pretty near a satisfactory amount for agricultural uses, with or without supplement by irrigation, as the local supply and demand may be. It should be remembered, second, that when the rainfall gats much above normal, as it is now doing, there is a great waste and disadvantage in it, and sometimes there are great losses involved. When rainfall is in excess it must therefore be counted water not for direct production, but for development—for navigation or for irrigation through storage and regulated outflow. This should be the next phase in the growth of California. It has been foreseen

from the beginning and preached about by many far-seeing pioneers. It is time now that its speed of realization should be accelerated and our waterways notably improved as drainage channels for flood waters, as highways for navigation and maintained for continual use by storage at their headwaters for this purpose. This great California problem will be set forth most effectively at a free-for-all convention to be held in this city on January 15 to 17 under the auspices of the Commonwealth Club. There will undoubtedly be thousands present, for all organizations and municipalities are naming delegations. We feel impelled to forsake all these and to say to the individual reader who is inclined to pursue business or pleasure in this city for a few days: Time your visit to cover the dates of the Internal Waterways Congress, as given above, and see how you can be stirred up with new conceptions of California's duties and opportunities.

Making Rivers Work.

There is no doubt about it: American rivers are being allowed to loaf on their jobs, and it is the fault of the people who are making products beside them and of those who are paying too much for these products because the rivers are idle. Of course our attention has been distracted because we have been building so many railways all these years and the idea has been encouraged that a waterway is a slow, old-fashioned affair—an affair of drifting schooners, of mule-drawn canal boats or of poled barges. We ought to shake ourselves out of that memory of the past. The Panama canal and the fleets of ocean grey-hounds which are now building to use it, certainly should jar us awake to similar use of internal bays and rivers. There is no reason, except our own listlessness, why active traffic by water is not now in operation to all cities and towns around the bay by opening sloughs or digging canals. There is also no other reason why quick boats are not plying, not only about the delta of the San Joaquin and Sacramento rivers, but going hundreds of miles north and south up these rivers and reaching also many off-river cities by improved sloughs or canals. Perhaps objectors will say there is no traffic to warrant this, and the answer is that navigable waters multiply people just as surely as idle water multiplies bullfrogs. One reason good lands in our great valleys settle up slowly is the fact that cost of transporting products consumes the profits thereof. We rejoice in our extending local railways and trolley lines, but California will never fully arrive until fleets of scudding boats fill our waterways. So far as using available waters are concerned, we might almost as well be in western Nebraska, where there aren't any. While groping around among the effete monarchies last summer, the liveliest thing we saw was the river Rhine. We remember standing at one point, perhaps midway up the stream, where the specially-built river craft were scudding by, at the rate of about one a minute, laden with everything from people to petroleum, and everything going fast—even against a swifter current than is found in any stream which we look upon as navigable. No doubt the same is true of other European streams, which governments and people know how to use, for development, and yet we—well, never mind now: come down to the Waterways Congress in San Francisco, January 15, and stay three days with this problem!

The Western Point of View.

We are not surprised to find Secretary F. K. Lane, of the U. S. Department of the Interior, saying this: "There exists a feeling in the West that its affairs and needs have not been given that consideration at the hands of the National Government which they merit. This feeling is not confined to speculators or exploiters. It is the sentiment of many who are without selfish motive and regard the matter wholly from the standpoint of national growth. There is one very simple explanation for the existence of this feeling. We have adventured upon a new policy of administering our affairs and have not developed adequate machinery. We have called a halt on methods of spoliation which existed, to the great benefit of many, but have failed to substitute methods sane, healthful and progressive, by which the normal enterprise of an ambitious people can make full use of their own resources. We abruptly closed opportunities to the monopolist, but did not open them to the developer."

That is just right. The West does not agree with the far Eastern view that forests, power-sites, coal lands, etc., should be stored up for coming generations; it wants something done with them right now so that there can be some generations coming in the West. Those who are contending in a public-spirited way for Western development are not locked up fast with promoters and projectors who start enterprises for the initial rake-off and for the subsequent stock-watering. At the same time many of them may prefer to have some men make too much money than for all men to have no chance to make any. The West believes in busy, not in idle, conservation of resources. Uncle Sam has things pretty well locked up now, and that is all right when there are thieves about, but, as Mr. Lane says, he must help now to advance development so that enterprise shall receive a fair reward. The way to do that is to arrange for money at low rates and with time enough for a developer to turn around. So long as the whole business is left to hungry capitalists, they will demand heavy bonuses for the little they put in themselves and for their ability to draw in others with the glare of unearned increments. All such increments belong to the people, but the enterprising developers must be fairly paid and their risk reduced by the banishments of too great and too rapidly maturing obligations. Such things must be financed for success. It is a public service.

A Blast from Olympus.

As though to arouse us from listlessness and forgetfulness of our world-opportunity, the "Thunderer" lets fly a bolt at us. While we are writing this, the London Times is issuing, under date of December 31, a special supplement of fifty-four pages dealing with the people and States of the Pacific Coast of North America. This special number has been prepared in view of the attention now focused on that portion of the world, which is destined to play an important part when the Panama canal is opened. It will present a full account of the industrial and commercial developments of the Pacific Coast, its social conditions and descriptions of its various people, with an attempt to forecast its future in the canal era. Thus it appears that the world has its eye upon Pacific Coast development, and the question comes again: What are we ourselves going to do about it?

Burdens of the Farm.

We were reading the other day of a farmer back East who was paying alimony to three divorced wives, was supporting the fourth and trying to educate all the children left him by the first three on their several departures. And we wondered if there could be a heavier burden for one poor farm to carry. We are still in doubt, because we have just read of a Maryland farmer named Theodore Colvin Wills—whose first name ought to help him somewhat. Mr. Wills is just being congratulated by his neighbors on the completion of a new farm house built to withstand the tremendous weight of his family. The Wills family, with seventeen active members, weighs more than a ton and a half. Mr. Wills, who is 64 years old, weighs 225 pounds, and the rest of the family is as heavy proportionately, ranging down to Macdonald Wills, who at 7 years weighs 110 pounds. There are eight giant sons and seven daughters. Bruce Wills, 15 years old, weighs 230 pounds and is 6 feet 4 inches in his stocking feet, and all the girls are more than 5 feet 8 inches in height. This poor farmer's problem has evidently been to keep his family out of the cellar and his architectural achievement sheds new light on the old proverb that where there are Wills there are ways.

Queries and Replies.

Querists must submit full names and addresses.

Polishing Pecans.

To the Editor: Please inform me how to polish pecans.—J. P. R., Farmington.

Pecans are polished by putting them in a revolving barrel only partly filled, so that as the barrel turns they fall upon and rub each other producing a beautifully smooth surface. When it is desired to give an artificial color, a little "Spanish brown" dry paint is put into the barrel. If the natural coloring is desirable, a little sharp sand put into the barrel assists in the scouring and produces the desirable uniformity of color. This barrel is rigged up like a revolving churn, with a side door in the staves and a gudgeon on each head which is fitted into proper bearings on two posts; proper arrangement being made for a pulley or crank by which the apparatus is turned either by hand or motor power.

Prunes in Southern California.

To the Editor: In taking out some old prune trees and leaving some in the orchard, do you anticipate we will encounter difficulty in getting young trees started in place of those pulled among the old ones left standing? Do you think the future outlook justifies the replanting of prune trees, and what kind would you plant, or would you advise replacing them with walnuts?—P. S. C., Elsinore.

The prune which is most likely to be successful in southern California is the common French prune. This variety is more generally successful than any other, but even this is sometimes unsatisfactory in your part of the State, and therefore before planting you should determine the experience of older growers in your district, unless you already have sufficient evidence from the old trees which you speak of. It is difficult to start young trees among old ones, and to do this one should dig large holes and fill with fresh earth and then cut around at a distance of four feet or so, so as to remove roots of old trees running into the terri-

tory of the young ones. This ought to be done two or three years in succession until the young trees get a vigorous hold. It would be just as difficult to establish walnut trees among old prune trees as it would be to plant young prune trees.

On the Edge of Alkali.

To the Editor: What grain will do best on alkali spots?—V. N., Stevinson.

It depends upon the strength of the alkali whether any grain will start or come through. If the alkali is light and carried down well by the rains, barley may go to hay or possibly to grain, depending on how long it takes enough alkali to rise by surface evaporation to kill the plant. Barley is most likely to make the race, because it is a quick winter grower, but, as indicated, if the alkali is sharp you may not get the worth of your seed, or any part of it.

Cutting Alfalfa for Hogs.

To the Editor: Kindly inform me if alfalfa run through an alfalfa cutter and fed to hogs would make hog raising profitable?—E. J. C., Stockton.

Cutting alfalfa for hogs is commended by some experience, but a great many other things are essential to profit with hogs. Cutting a man's whiskers may make a man handsomer, but it will not constitute him a captain of industry.

Will Bisulphide Vapor Kill Young Trees?

To the Editor: Would it be safe to use carbon bisulphide to kill morning glory in a young orchard? Would there not be a danger of injuring the roots of young trees?—F. C., Lincoln.

This is exactly the point we had in view when we made the comments on the use of the new weed-killing vapor "Nonpareil" on page 584 of our issue of December 20. Try it on some yellow dog of a fruit tree which you do not mind killing, and see what happens.

Will Burbank Pollenize Tragedy?

To the Editor: Will you advise me whether the Burbank plum would be as effective as the Clyman (as mentioned in "California Fruits and How to Grow Them") planted with Tragedies for the purpose of cross-pollination? From what I can learn from growers in my district, the Burbank and Tragedy blossom at practically the same time.—F. C., Lincoln.

That has to be determined by experience. Presumably it would if the blooming were coincident. It would be expected that the Burbank as a Japanese could bloom earlier than the Tragedy—a domestic by descent. We have not seen them together. Will some grower answer?

A Homesick Lime Tree.

To the Editor: What ails my lime tree? There are plenty of fruits on the tree, but at the same time the leaves are falling off and turning yellow. It is four years old and has been acting this way for the last six months.—A. S., Santa Cruz.

The twig of lime tree which you send is not affected by any disease. The mottling of the leaf is probably caused by temperatures which interfere with the activity of the leaf, or by some other obscure cause which may be located in the soil or the moisture supply. The lime is a more tender tree than either the orange or the lemon, and possibly some conditions prevailing in your locality are not very favorable to it. Santa Cruz summers would hardly be expected to be warm enough for a lime even if the winter should be too warm to kill it.

Hints on Berry Growing.

[From a University Extension Address by Claud D. Tribble, Elk Grove, at West Gold Ridge Improvement Club.]

LAWTON BERRIES.—I am told that one of the berries principally grown is the Lawton blackberry. This variety is propagated by taking the young plants which come to surface from roots that appear to be sent out from the parent plant to reproduce itself. It is best to get all the root possible to make a vigorous healthy plant. These are planted in rows six to eight feet apart and six to eight feet apart in the rows. The ground should be well plowed and fertilized before planting.

These plants grow upright and do not produce rooted tips. It is best to give the plants some support the first season by a stake, and the second season the permanent stakes are put in, one on each side of the plant. In driving them, allow the tops to be wider than the bottom so the berries can be picked easily. Large wires or wooden cleats are used to support the vines or canes. The posts are about six feet long and driven in the ground till solid, making the top about five feet high.

During the first season's growth there is very little pruning except thinning to the desired number of canes. The second year the canes are allowed to grow above the stakes and then tipped to cause laterals to form, which are cut back to less than 12 inches to produce berries the following season. The old wood is cut out each season and the new shoots trained as before. If the old canes are cut out as soon as the crop is gathered, it is done more economically and the young plants grow better.

THE MAMMOTH BLACKBERRY.—This berry, which was propagated by Judge Logan of Santa Cruz, is one of the earliest of blackberries, very productive and is one of the most delicious. The plants are propagated from rooted tips which appear on the ends of the vines during the winter months. Mammoths are planted in the same manner as the Lawton, but are usually trained on a wire trellis made by driving posts at each hill and nailing on cross-arms to support the wire, which is stapled to each end of the cross-arms. The laterals are trained along the wire about half way between the hills, and then cut off to cause them to throw out fruit spurs. As soon as the crop is taken from the old canes they should be taken out and the new canes trained on the trellis as before.

THE HIMALAYA.—This berry, introduced by Mr. Burbank, is adapted to both wet and dry soil conditions. The plants are very hardy and often make a wonderful growth the first season, canes often attaining 25 feet the first season. They need to be trained on wires, as mentioned in trellis for the Mammoth blackberry. This trellis is made on posts 7 feet high and 30 feet apart. Two wires are stapled on the posts, one 3½ feet from the ground and the other at the top. Rows should be planted 10 to 12 feet apart and about the same distance in the rows. The long runners should be trained and woven in these wires to hold up the load of fruit. The second year the runners will throw out laterals thickly along the main canes; these fruit spurs are from 2 to 2½ feet in length, projecting outside the

main canes where the berries are all exposed to the picker's reach. Not over four canes should be allowed to grow in each hill. After reaching the desired length they should be tipped. This variety bears on the same spurs each season and reaches its maximum production the fourth or fifth year. This variety is the latest to ripen with us, coming in after the Mammoth blackberries have all gone.

The Logan and Phenomenal berries are given about the same care as the Mammoth blackberry. With us the Logan is a fine berry, healthy and productive.

RASPBERRIES.—But few varieties of the raspberry have proven profitable in California. The best seem to be the red varieties, as the Cuthberth and Antwerp. There are other varieties that have given promise of making good, two of these are the Superlative and California Surprise. These are red varieties. Only one "black cap" variety has proven productive with us; this is the Plum Farmer. The red varieties are trained much the same as the Lawton blackberries and the "black caps" like the Mammoth and other trailing berries.

When visiting near Puyallup, Washington, a few years ago, my attention was called to a large raspberry field which was cared for in the following manner: Rows were planted eight feet apart and plants six feet apart in the rows; the rows running north and south. The canes were supported by wires, the east wire being six inches higher than the wire on the west. The posts were about 4½ feet high. The cross-arms which held the wires were 30 inches long; two-thirds of the length extended to the east and one-third to the west. All canes were trained to the east and fastened by looping with a strong twine around two canes and the canes were not topped. The incline of the canes from the ground to the wire gave them spring enough so they would not break over the wire; the new canes were kept on one side and did not interfere with the picking and the berries were picked from one side of the row. The advantage claimed was that the berries were all on one side of the row and not tangled.

DEWBERRIES.—With us the Lucretia dewberry has proven profitable as a home canning berry to sell to local trade. Where this berry has become known it is used nearly exclusively for family canning. The vine cannot be trained up as high as other berries. The best method of training is to drive posts between the hills and make a half hop of coarse wire extending from the root of the plant over the arms at top of the post and training the plants on this. The post should not be over three feet high. The rows are usually six feet apart and the plants six feet apart in the rows. The vines should be well thinned to produce large berries.

A NEW EARLY BLACKBERRY.—Some years ago when picking some blackberries (probably the Kittattinny) I found a small vine growing near these old vines which was unlike any other blackberry I had ever seen. The berries had dried up on it at the time of picking the others, but in testing the fruit it was better than anything I had ever tasted of the blackberry varieties. I watched for this new variety to ripen the next season, and

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THOS. S. DUANE, Prop.

Martinez, Cal.

when it did it was a month earlier than any other blackberry under my observation. That fall we took up the plant, also the tips, as it proved to be of the dewberry type and planted it in our patch of berries along a row of Mammoth blackberries, and it ripened its fruit a month before the Mammoth. The last of the new berry was just about finished when the first Mammoths were beginning to turn black. This berry has proven prolific and of good size and the best flavored blackberry we have ever tasted, and pronounced to be as good as the best by Dr. Van Fleet of the U. S. D. Agriculture, who is said to be the best expert on the rubus family. It is not so large as the Mammoth, but of good size. It is supposed to be a cross-pollination of the Kittatiny and the California wild dewberry, by the bees.

FERTILIZATION.—Soil management for fruit crops requires greater care and oversight than for other crops. Small fruits, especially those of the viney nature, are easily unbalanced by improper fertilizing. No one condition has more to do with the success of a berry than a thoroughly congenial soil. The elements that go to make a given soil thoroughly adapted to the best use of the fruit area are manifold. We can get many suggestions by studying other successful plant feeders, but after all, in the final we must work everything over and suit our own peculiar conditions.

The system of soil buildings is only most profitable when it is so conducted as to give us the greatest amount of net value from a given area. In a general way, we must have a soil provided with enough humus or vegetable matter to make its mechanical condition perfect, but must not overdo it. Too much nitrogen is likely to force vines at the expense of the fruit buds and throw the fruit plant out of balance and so produce an excessive amount of spindling foliage with a corresponding decrease of fruiting impetus. This usually is made evident by poorly developed fruit stems and comparatively few blossoms. Vegetable manure is a one-sided element of fertility likely to furnish too much vine-producing food with comparatively little phosphoric acid and potash. In the case of the soil not having liberal quantities of the latter mentioned elements naturally supplied, a liberal dressing of stable manure may be worse than no fertilizing at all. In order to determine the amount of available phosphoric acid in the soil it is well to experiment in a small way with these feeds to prove the soils.

CULTIVATION.—Thorough cultivation means the success of berry culture. With us we necessarily irrigate, which is not necessary in this section. During the season the ground should be thoroughly plowed several times followed by a thorough harrowing after each plowing. Thorough cultivation and the keeping down of the weeds means large crops of large berries, which in turn means profits and satisfied patrons.

DISEASE.—Rust produces bright colored masses of spores covering the under side of the leaves. This fungus spreads all through the plant, making it somewhat hard to control. Cut the affected plants to the ground and use bordeaux on the new shoots.

Leaf spots produce small dead places in the leaves but seldom does serious damage. Spray with bordeaux several times at short intervals, beginning just as the buds begin to

swell, and spray four or five times in ten days.

Crown gall or black knot consists of large swellings on the crown just below the ground and on the roots. Look out for this in buying plants. There is no cure known, and do not take plants from infected ground to plant on clean ground, as the disease is infectious.

Fruit rot causes the berries to decay on the vines and is distinguished by a gray dusty mold. Usually more prevalent in moist weather.

INSECT PESTS.—A species of the horn-tail fly, known as the raspberry borer (*Hartigia abdominales*) matures about the first of May. The female begins to deposit her eggs under the bark of the tender twigs of the berry plants. The egg hatches into a very small worm which bores downward in the sap or cambium layer, at the same time encircling the twig, thus cutting off the sap flow, from the upper portion of the twig, causing it to wilt and die. The worm encircles the twig several times, then enters the heart and eats its way downward. In the fall the larvae pupates and remains till spring. This insect attacks loganberries, phenomenal berries, blackberries, raspberries and roses. The only remedy is to cut off the infested parts before the worm gets down to the ground to pupate. Be sure and cut below the worm, and it is best to burn the twigs or canes.

All berry plants and rose bushes are subject to the rose or berry scale. It is a pinkish white scale. As all stages of the insect occur at the same time it is rather difficult to eradicate in a short time. The eggs are usually not killed by sprays and live insects have been found on fumigated nursery stock. The worst infested canes should be cut out and burned. Kerosene emulsion or soap and water can be used as a summer spray. Lime-sulphur can be used with good effects when plants are dormant. Miscible oil spray is very efficient, but care should be taken not to spray too often with these oil sprays during the summer.

Among the insects that sometimes work on the berry plants to their injury is the apple leaf hopper which is controlled by whale oil soap solution one to eight; also by oil sprays. Cottony maple scale is controlled by kerosene emulsion. Oyster scale is easily controlled by lime-sulphur during the winter. The frosted scale sometimes works on the loganberries and is controlled by distillate of oil emulsions. Citrus thrips sometimes work on the raspberries. This is best controlled by nicotine 40% or extract of tobacco applied at 175 to 200 pounds pressure. San Jose scale is easily controlled by any of the oil sprays.

PLANTING MANGEL WURZEL

To the Editor: Is this a good time to plant Mangel Wurzel in Kings county? What is the best method of planting and how much to the acre. When are they ready for harvest?—B. D. S., Lemoore.

[You can plant at any time of the year that you have land of the right moisture, except that you must not plant in cold, wet ground. Beet seed is rather apt to rot unless there is heat enough to start it quickly. If you can get a stand in January in your region the crop will be ready in June. Plant thinly in drills about 2½ feet apart for horse cultivation—using about five pounds of good seed to the acre—EDITOR.]



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The Attractive and Fickle Olive.

(Continued From Page 1.)

encouragement to bearing and quality may be discovered by pruning, fertilization, cultivation and care. If we can make a go of it now, we can do better later and things are fine enough as they are.

One certain thing in olive production is that the olive is no fool tree, it wants good soil, sufficient moisture, proper pruning, culture and care.

CHOOSING A LOCATION. The best guide in selecting a location is to find where olive production is a great success and then plant right alongside of it, or under as nearly similar conditions as possible. In general it can be said the olive wants a hot, dry summer, a climate that would be fairly suitable for Muscat raisin production. More particularly, the great central valley of California, especially toward the foothills, where oranges are and might be grown, provides a typical olive district.

A resemblance to citrus situations is particularly desirable from the standpoint of frost. While the tree itself can withstand very cold weather, the fruit may be changed by moderate frosts from \$160 pickling olives to \$45

hurt they are still good enough to pay expenses. The oil proposition helps remove temptation to lower standards by putting in culls and inferior fruit. In case of an overproduction, all that is needed is to cull a little closer and prices will keep up nicely. Oil is an excellent thing for an emergency and will regulate the supply and demand when the supply catches up, if it ever does.

The oil market has been greatly helped by the pure food law which prevents adulteration and makes cottonseed oil and former adulterations sell on their own merits. Congress reduced greatly the tariff on olive oil, but in spite of that fact, oil olive prices are better by \$5 per ton or more than they were a couple of years ago. There is a wide market for oil and if the demand grows with a knowledge of the product as it has recently, the oil business should greatly improve.

There is a great difference in picking costs whether olives are meant for pickling or oil. In one case they are hand picked several times, in others they are knocked off on the ground or on canvas with poles. Hand picking will cost from about \$18 to

and there against the other three. The quality is good, as is thrift and bearing habits, and it also is very satisfactory for oil, though it would give place to the Nevadillo as a strictly oil olive.

Whatever variety is grown, great opportunity for improvement exists by selection of wood for propagation. In nearly every grove trees will be found some years that are loaded while sister trees stand bare. Some ripen earlier than others, or give a larger and finer fruit, or show superiority in other ways, and from these only cuttings should be made.

FUTURE POSSIBILITIES. — Looking to the future prospects are bright. The public hardly knows the ripe pickled olive and the few that do know it are enthusiastic and have run up prices where they are. It is not clear how big the demand will be when it becomes known all over and coming improvements in quality are made. We always have the oil to fall back upon, and the possibility open of pickling green olives, which is an entirely different product.

California is the only State where olives can be grown extensively, though we can share some acreage with Arizona, and California acreage production can equal any Mediterranean country. The tree is healthy and has only small insect pests and diseases to overcome in the real olive districts, and these can be overcome inexpensively.

In Europe they have cheap labor, a thing that is far outbalanced by an olive worm which we do not have, that ruins a large proportion of olives for pickling, especially ripe pickling, and even greatly injures the quality of oil. Whatever other advantage we have in clean efficient pickling processes, worm injury there should put us beyond reach of competition from ripe pickled olives, the product that gives the velvet to the olive industry today.

The olive merits our admiration, and although we have lots to learn about nearly every branch of the industry, we are on a good footing even now. If things are as good as they are now when we have so much to learn, what will they be when we have made those improvements that seem so possible?



A Well Kept Olive Orchard in Madera County.

oil olives, which takes off all the profit in the proposition. It does not take a very intense frost to spoil an olive by rupturing the cells.

These frosts do not often spoil a whole crop, they rather affect the latter part. Olives are not picked all at one time for pickling. First the ripest ones are picked, then others as they ripen, and while a person might get pickling prices for the first part of his crop, he runs a good deal of chance of getting barely enough to keep the pot boiling for the rest. That is why it is wise to get where frosts will bother as little as possible. The man that figures \$160 per ton for his crop is a pair with the prospective poultryman that counts his chickens before they are hatched. He may not get the right location, his trees may bear irregularly, a certain proportion of his crop will grade too small for pickling and have to be sold for oil, and he stands several chances of having his large olives frosted or otherwise spoiled for pickling after all.

THE OIL PROPOSITION.—Oil is a fine thing to fall back on, though few would care to grow olives for oil. For one good thing, when most crops are ruined by frosts or otherwise, their value is destroyed. When olives are

\$35 per ton, averaging perhaps \$25, which of course leaves only about \$20 per ton net for the culls, depending on the selling price. In such a case the No. 1 berries give all the big profits. But when frosts or bad weather injures the whole crop and it can be harvested with poles, the cost of picking is so reduced that much better net returns are secured—about enough on the average to pay running expenses or better. Thus in the olive business oil manufacture eases up misfortune nicely.

VARIETIES.—We are fairly clear on the subject of varieties, having tried out every standard variety a long time since. From the competition the Mission leads the field by a big margin. The Manzanillo, of about equal size, comes in for certain favor, and two large varieties, the Sevillano, or Queen olive, and the Ascolano have their adherents. Other varieties meet little favor. It would be well in contemplating planting to note carefully which of the above four does best under definite conditions, and to know clearly the ideas of the pickle manufacturer who is to buy the fruit. An outstanding fact is that though the Mission is becoming ever stronger in favor, objections frequently arise here

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A Newcomer and Alfalfa.

To the Editor: I am a new subscriber, have just received my first paper and like the looks of it, and like it for being a weekly paper. We are in Merced county between Winton and Atwater. We have no money to throw away, being like a good many in a new place, short of funds. We are thinking of trying some fertilizer on alfalfa that we intend to sow this spring. Can you tell me what is the best kind for this kind of soil, which is quite sandy? Can you tell me what it can be bought for by the ton, who has it for sale and if the parties are reliable, about how much to sow, and the cost per acre? Do you think it would pay a man short of money to try the fertilizer? Which is best: to broadcast alfalfa or use a drill, and how deep can it be drilled?—E. L., Winton.

[There seems to be no doubt but what a little fertilizer to start off alfalfa well repays the expense. However, the vast majority of alfalfa plantings are made without it and as long as you are short of funds you probably might just as well do without it, too. A small dressing of stable manure is fine and a little nitrate of soda will set off alfalfa well, though one never would think of applying the latter to growing alfalfa. After you have cropped your alfalfa for several years you may find the crops diminishing and then perhaps will want to apply gypsum, or superphosphate, or perhaps lime or potash. The first two, especially gypsum, would have some good effect in starting alfalfa off nicely, though gypsum is more of a stimulant than a genuine plant food. About 150 pounds per acre would be a fair dose in planting alfalfa, though much more is desirable for an old stand. Gypsum is about \$7 to \$9 per ton at factory, superphosphate \$17 to \$20, nitrate \$45 to \$50. You can get all materials named from our fertilizer and lime advertisers who are reliable both as to prices and quality of product. A drill is highly advisable in planting alfalfa, if one can be obtained. It saves seed and gives an even distribution and stand. It should be put in about an inch deep, or so that it is in contact with soil moisture. We would like very much to hear of the results secured from fertilizing a bit in starting alfalfa if any of our readers have tried it, as the opinion is strongly in favor of so doing, though we have not seen enough of it to amount to anything. The more you read the PACIFIC RURAL PRESS, the better it is to be hoped that you find it.—EDITOR.]

ADOBE AND ROCKY HAY.

To the Editor: I recently bought from a dealer 168 bales of hay weighing 33,360 lbs. that contains an unusually large amount of dirt and rocks—from what I have used I would say 10 lbs. to the bale. It is impossible for a baler to accidentally get so much dirt in hay. It is evidently put there to increase the weight. Some of the rocks are almost as large as a man's head. Has anyone a right to sell such stuff for hay at \$17 per ton? Would this come under the jurisdiction of the pure food laws? I use about 200 tons of hay a year; have had lots of it baled and have been in the business for 15 years, have seen dirty hay before but not as bad as this. I think the evil of throwing dirt and rocks in hay should

be stopped. It is an injustice both to the dealer and consumer who can judge only by the outside of the stack or bale.—R. N. TUNSTALL, Guerneville.

[There is no doubt about the justice of your proposition. Some articles will get in accidentally no doubt but not to the extent you indicate. You can require a guarantee of clean hay from the dealer or even without that you can throw back the hay on him just as soon as you find a few bales running to adobe and rocks. This is the way dirt was kept out of the bales to one or two of our leading hay districts a few years ago. In the south, bean cleaners came in because people refused to buy chunks of dirt in bean sacks. It is pretty hard to determine intent to deceive in such cases but the way to stop it is to send back the goods.—EDITOR.]

Timber to the value of \$4,500,000 on the stump was sold by the U. S. Forest Service in 1913. A large number of the national forests already more than pay operating expenses.

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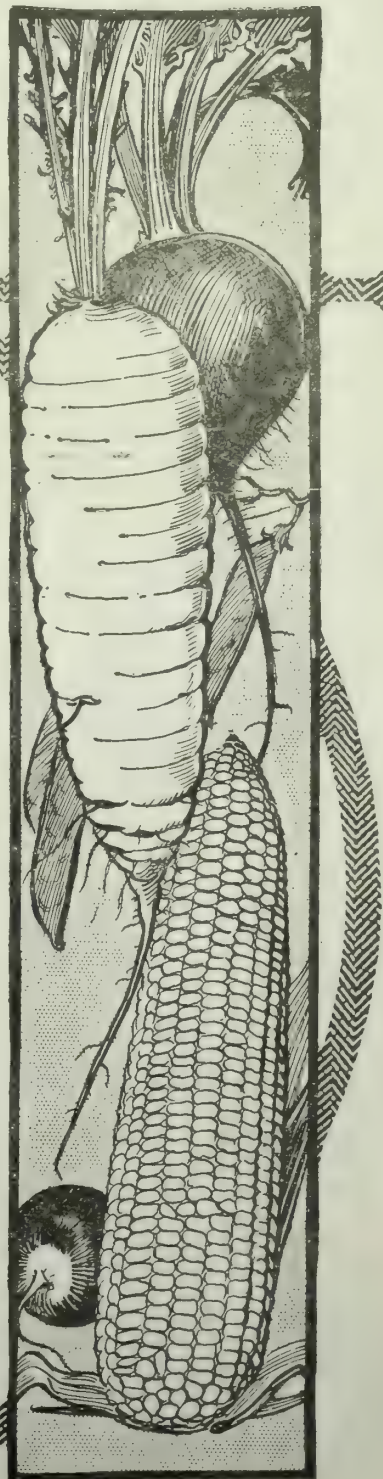
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Native Shrubs for California Planting.

[By THEODORE PAYNE, of Los Angeles, at the convention of California Nurserymen at Fresno.]

The people of California have at last awakened to the great value of the native vegetation of the State. This fact is evinced by the demand from all sections of the country for native trees and shrubs for planting in gardens, parks and public grounds. Until recently the demand has been for exotics almost exclusively. In many cases a plant that grew wild was looked down upon, not for any particular reason except, "Oh well, that grows wild up in the hills," or "That grows wild over there in the wash."

CALIFORNIA PLANTS REPRESENT CALIFORNIA.—As an illustration of this, a lady entered my place of business a few years ago and asked for some flower seeds typical of California, something they did not have in the East. I, of course, showed her some packets of native flower seeds. She had about decided to take them when all at once it dawned upon her that they were wild flowers. "These are not wild flowers, are they?" she asked. When I informed her that they certainly were, she replied, most indignantly, "Oh, I don't want wild flowers." Picking up a packet of *Coreopsis lanceolata*, she said, "I rather like this." "Well," I replied, "that grows wild in Texas, this flower here grows wild in Mexico, and this one here is from South Africa. All plants are wild somewhere; of course there are improved types originated under cultivation, but the original species are wild in some part of the globe. We have just as beautiful wild flowers in California as anywhere else, and these are the only flowers that truly represent our State." It was no use; she could not be convinced; she did not want wild flowers and finally wound up by buying some pansies and stocks with very large, attractive illustrations on the packets. Both the lithographed packets and the seeds were imported from Germany—these she took East as representative of California. However, this does not often happen now. The Eastern people, as a rule, appreciate our native plants, and the Californians after having brought exotics here from all parts of the globe for over half a century, have at last begun to realize that after all the greatest wealth of vegetation is that which Nature planted here herself—our own native plants.

How CALIFORNIA PLANTS CAN BE USED.—Realizing this fact, we should establish wild gardens and wild parks. Why not have a dry land garden, planted exclusively with native trees and shrubs; no artificial watering would be necessary, the plants depending on the natural rainfall. Native flowering perennials could be planted and seeds of annual wild flowers sown broadcast. The perennials would flower each season, while the annuals would resow themselves and come up every year after the rains commence, forming a perfect carpet of flowers for many months.

Frequently a private individual, or sometimes a city, acquires some dry hillsides, immediately they proceed to install a water system, then follows the planting of lawns and exotics. Such plantings are out of all harmony with the natural surroundings and are in

no way beautiful or artistic, but really mar the landscape. How much better it would be to plant such hillsides with native plants which are accustomed to the dry conditions and harmonize perfectly with their surroundings. Personally, I only know of one absolutely wild dry ground garden in the State, and this one was planted by Dr. Wm. Bebb at Alhambra. The results he has obtained in about three years are marvelous. On entering the place, one sees the Wild Cherry in the height of perfection, beautiful clumps of Wild Lilacs, Christmas Berry, Wild Coffee, Yellow Bush Pentstemon and a great many others, flowering perennials in great profusion, and if it happens to be the right time of year, a perfect wealth of annual wild flowers. This garden is never watered. Hundreds of people stop to admire it, many of them wealthy residents from the outlying districts of Pasadena, and if they did but know it, frequently some of the same species of plants have been grubbed out of the ground where their own gardens now are, to make room for the conventional lawn and plantation of exotics.

Every city should have a natural park, planted with native plants exclusively. It would not only be distinctly typical of California, but a source of interest and education to residents of the State as well as to visitors from all parts of the globe.

Native plants should be used freely in the planting of school grounds. The children should be encouraged in the growing of wild flowers in the school gardens, thus they will learn to appreciate the vegetation of their own State and to realize the beauty of familiar things surrounding them.

What flower is more common than the Wild Sunflower, and yet where is there one more beautiful? If it came from Africa, was hard to grow and cost \$5 a plant, we could appreciate it more and marvel at its beauty.

A few years ago if a nurseryman had, by chance, some native shrubs on hand, they were generally consigned to a back corner because he said there was no call for them. If some crank came along, he could generally get them at his own price. Now almost every nurseryman, is asked, "What have you in wild shrubs?"

It is not my intention to mention here all those that should be grown, but simply a few of the most important.

THE CALIFORNIA LILACS.—One of the most valuable native shrubs is the *Ceanothus*, of which there are many species. In early spring they present a most charming appearance on many of our hillsides, with their long sprays of delicate, fragrant flowers, ranging in colors from pure white, pale blue to bright and dark blue shades. They are propagated from seed, are of easy culture, rapid growth and particularly valuable for dry places. *Ceanothus thyrsiflorus* is one of the best known. It forms a handsome shrub with dark green shiny foliage and large panicles of deep blue flowers. *C. divaricatus* is of rather more spreading habit than the last the ends of the branches having a tendency to droop downward and the young twigs generally terminating in spines. The stems and leaves are both glabrous and plaucous, giving the plant a particularly clean appearance. The flowers are in large panicles, very pale blue, sometimes white. *C. spino-*

sus is somewhat similar to the preceding but taller in growth and the foliage of a light green shade. *C. tomentosus* is a handsome shrub of more slender growth with gray or often reddish stems, foliage velvety above and tomentose beneath, flowers deep blue.

A beautiful white flowered species is *C. macrocarpus*, which forms a dense, closely branched shrub with small, dark green foliage. *C. crassifolius* is another white flowered species, taller than the last with rather rigid stems and opposite dentate leathery leaves. *C. integrissimus* is from a higher altitude, being found in the upper chaparral and pine belts. It often covers whole mountain slopes with its white blossoms, reminding one of drifted snow. It is a tall, loosely branching shrub with green or somewhat brownish stems and light green, slightly hairy foliage. (It goes under the common names of "Deer-bush," "Mountain Birch" and "White Tea-tree.") Cattle are said to be very fond of the foliage and the leaves and twigs have the fragrance of the black birch. An interesting fact in regard to *Ceanothus* is that the flowers of many kinds make an excellent substitute for soap, rubbed between the hands with water they make a perfect lather, cleansing the skin and leaving a delightful fragrance. This is also true of the seed vessels of some species, as I have found from experience.

The seed capsules of *C. divaricatus*, when first ripe, are covered with a sticky, glue-like substance. After gathering a quantity of this seed, my hands were covered with a thick layer, which looked like hardened glue, and I wondered how I would ever get it off; but upon stopping at the first stream I found that it not only came off easily, but it made a splendid soap, cleaning the hands perfectly.

CALIFORNIA SHRUBS.—Three evergreen shrubs especially desirable for their handsome foliage are *Rhus laurina* (Sumach), which grows in compact form, has reddish stems, smooth green foliage and clusters of small white flowers; *Rhus integrifolia* is especially common near the sea coast and has thick, leathery rich green foliage. *R. ovata* forms a magnificent shrub with extremely handsome thick, glossy green leaves.

The Wild Coffee (*Rhamnus californica*) is well known and is a shrub which is in great demand. *Rhamnus crocea* is a low, thick, very densely branched shrub with small green leaves and insignificant flowers but producing, later in the season, quantities of rich scarlet berries. *Rhamnus ilicifolia* is a form of the preceding but differs considerably in growth, forming a large, branching shrub of rapid growth with holly-like foliage and scarlet berries.

A splendid shrub either for single specimens or for hedges is the Wild Cherry (*Prunus ilicifolia*). It has pretty, glossy green, holly-like foliage and small white flowers. Many specimens are to be found in some of the large gardens around Los Angeles and Pasadena and every one agrees that it is one of the most beautiful shrubs grown, and I cannot say enough in praise of it.

There are many native conifers of value for dry-land gardening. There is one, however, which is particularly useful. This is *Juniperus californica*. It is found in some of our dry, sandy washes and is generally a dwarf spreading bush, but occasionally attains the size of a small tree. It has long been cultivated in Europe, but



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has not been appreciated in its native country. We could use it to great advantage in many of our gardens.

The Christmas Berry or California Holly (*Heteromeles arbutifolia*) is, of course, well known and greatly admired by everyone. It does exceedingly well under cultivation and the young plants are now in great demand. The best specimen I have ever seen is in the grounds of ex-Senator Thomas R. Bard at Hueneme. Everyone knows its pretty foliage and attractive berries used so plentifully for decorating at Christmas time, but few realize its other attractions. I happened to see Mr. Bard's specimen when in full bloom and it was truly a magnificent sight with its large trusses of white blossoms. Mr. Bard was so pleased with it that he has since planted upwards of a hundred more of the same shrub.

Almost everywhere in our foothills can be found the Sticky Monkey Flower (*Diplacus longiflorus*) or *Mimulus glutinosus*, as it is termed by some botanists. This shrub grows from two to five feet high. The flowers remind one of an Azalea and are usually of a deep rich orange color, though other forms are frequently found, sometimes of a pale creamy white and occasionally of a dark reddish brown shade. This plant lends itself particularly well to cultivation, and if watered will bloom almost the entire year round. One specimen in my own yard has been in bloom since the early part of last February. It is in full bloom now, and if it continues to blossom during the next three months, it will have been in bloom for every month of the year. *Diplacus puniceus* is found near San Diego and is of similar habit, but has crimson scarlet flowers.

We have two native Salt Bushes useful for single specimens, or perhaps more particularly for hedges. *Atriplex breweri* is common along our coast. It is easily propagated from cuttings and grows rapidly and can be trimmed into a solid hedge. The leaves and stems are of a grayish-green color. This plant has been cultivated very largely in Santa Barbara and has often been spoken of as the "Santa Barbara Salt Bush." *Atriplex canescens* is a desert species and is desirable, both on account of its larger and more silvery foliage, as well as its large, panicle spikes of conspicuous rose colored flower bracts.

A shrub common on many hillsides is the Grease-wood (*Adenostoma fasciculatum*), yet few people seem to know it. In May, many hillsides are white with the blossoms of this shrub. It flowers in large feathery panicles, reminding one of our cultivated *Spiraea Japonica*. This is one of the very best shrubs for dry gardening and should be grown extensively. A good companion for the preceding and found growing under similar conditions is the Wild Buckwheat (*Eriogonum fasciculatum*). When in flower it is a charming plant with its deep olive-green foliage and large heads of white flowers delicately shaded with pink.

The Prickly Phlox (*Gilia californica*) is a most charming and interesting shrub growing as it does on exposed, rocky hillsides. It is in flower for a large portion of the year, the blossoms resembling those of our cultivated Phlox, but large and of a delicate pink shade.

Quercus dumosa (The Scrub Oak) is familiar to everyone. With its thick, dense growth and dark green foliage, it is one of the most beautiful of our

native shrubs.

There are a great many other beautiful shrubs that should be grown extensively, some of which will be mentioned later.

(To be Concluded.)

"ROSELLE" AS "RED. SORREL."

Would it not be a great thing if Californians only knew what California was doing? Here as a surprise shout raised by the Los Angeles Express about a plant which has been very common in Southern California since the seeds were first distributed from the old University station at Pomona about 15 years ago. We print it so that the experience need not be repeated:

Here's a new kind of fruit. It is the *Hibiscus Sabdarifa*, commonly called Red Sorrel, and according to H. G. Carpenter of San Bernardino, it will eventually put a big "dent" in the lemon and lime industry. Mr. Carpenter is on his way home from Florida where he went to study the plant. The red sorrel now is grown in Mexico, the West Indies and in India. In the United States it is being developed at the United States experiment station at Miami, Fla. Mr. Carpenter in search of something new in the way of soda fountain drinks, investigated the red sorrel. It grows on a bush about five and a half feet tall and looks like a red flower. It is picked like cotton and dried. The dried fruit is sour. Mr. Carpenter brought back a quantity of seed and will plant them next spring. The fruit is gathered in the fall and the plant produces until frost nips it. Crushed in water the red sorrel makes a red fluid that Mr. Carpenter says is good for making wine, jellies or jams. It can be used for everything limes and lemons now are used for, he says, and is much cheaper.

The government experiment station at Miami has worked with red sorrel and has proved that it can be grown in Southern California.

[The station in Florida did nothing of the sort. The California station at Pomona did that. The seed has been regularly sold by Los Angeles seedsmen for a decade.—EDITOR.]

THE SEEDLESS PERSIMMON.

To the Editor: I have, within the past couple of weeks, noted three references in the daily papers to the so-called discovery of a seedless persimmon, one statement being that it was formerly known, but had supposedly become lost. Is there really anything to this, and has such a persimmon any especial value? It is true that though I lived in the Orient, mostly Japan, for five years and never saw a seedless specimen of this fruit, yet I did not suppose it quite or even nearly unknown for the reason that in the yard of the place where I lived for twenty-five years there is a seedless persimmon tree, the fruit of which is quite as large as a good sized navel orange; not the largest oranges, but good ones. This tree I bought about fifteen years ago from a nursery, and it bore alternate years quite freely until another house in the yard, by greatly shading it, has apparently interfered with its fruiting, and I think it has not produced fruit in three years, unless possibly it has a few this year. I have not seen it recently. This is the most superb persimmon I ever ate.—W. Stuart Smith, Lemon Cove.

[A seedling Japanese persimmon

was introduced into California in 1878 by Rev. Henry Loomis, a returning missionary with a horticultural eye. It was of the general character of the one you describe and was propagated to some extent. They can now be found in California nursery catalogues. There was no reason in the sensational treatment which the matter received in the daily papers.—EDITOR.]

PLANTING BLACK WALNUTS.

To the Editor: I am in a quandary as to the exact time one may plant black walnuts for future grafting. I am a newcomer to California and am not as yet well informed as to its condition. Owing to the many and heavy rains, have not been able to get my orchard ground plowed and leveled to plant the nuts this month. Can the planting be postponed to some future time to the nuts, which I have dried and prepared?—Mrs. A. C. S., Gridley.

[This matter has been frequently explained in these columns. There is no exact time to plant walnuts, but there is an exact time not to plant, and that is when the ground is full of cold water. January, in the central and northern parts of the State, is usually the worst time to plant anything—except perhaps in a dry year. Do not dry the nuts too much; they should rather be kept moist. Pile them out in the rain in a place where the water will not collect. Plant as soon as the ground gets to be nicely moist, but not wet. The planting should have been done last fall, but wait now and catch the right conditions in the soil, just as soon as it comes. Plow the ground when in the right condition; plant in the right condition—these things are more important than calendar dates, though of course you must be as early about it as you can.—EDITOR.]

LEAF MOLD AND OAK-ROOT FUNGUS.

To the Editor: We have been gathering leaf mold from under the trees in an oak grove and placing same (which is mixed with manure from cattle droppings, they having been pastured in the grove) around our young orange trees to provide humus fertilizer and put the heavy soil in good mechanical condition. The results have been fine. Now, I am wondering if it would be possible to infect the orchard, by the procedure, with "oak root fungus" providing it were present in the oak grove. I do not know that it is.—Subscriber, Oakland.

[One can hardly say it is impossible, but it is so improbable that we would not hesitate a moment to continue your practice because of fear of it.—EDITOR.]

A WINTER-BEARING STRAWBERRY.

To the Editor: In answer to inquiring subscriber, in your issue of Nov. 22, for winter bearing strawberries, I wish to state that I have been growing a variety here in the foothills, that proves to be a good winter producer, but wet weather causes a large percent of ripe berries to mould. The plants are full of blossoms and green fruit in the coldest weather, frost having no effect on production of blossoms but a freeze will kill them. However, they do not loose much time for in a few weeks new buds have started.—M. L. McHAFFIE, Watsonville.

What's in the Soil?

There's nitrogen, phosphoric acid and potash in your soil. Every pound of butter, bushel of wheat, sack of potatoes or bale of hay you produce and ship elsewhere, takes some of these soil elements away. Every horse, cow, sheep or hog that you sell also carries away a certain quantity of these same vital elements. Each crop produced eats up some of the raw materials in the soil.

You must have those raw materials or you can't go on producing. You must replace the vital elements taken away by the crops or live stock, else you get poor crops and no profit for your labor.

Science has discovered how to replace those elements, what to put into the soil to make it continue to produce profitably. It is simply to put back what was taken from it.

In our packing plant we have a by-product called "tankage"—the bones, blood and refuse from slaughtering. The animals consumed the forage from the soil containing these vital elements. When dried, ground and blended in scientific proportion with potash, the result is a fertilizer which again releases the soluble elements in the soil that produce profitable crops.

The materials in "Gold Bear" animal fertilizers are FROM and OF the soil—they go back into it to again do their work as no other materials can do.

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Constructive Agriculture—No. 1.

HOW THE EGG PROBLEM WAS SOLVED.

[The following is the first of a series of articles to appear in the PACIFIC RURAL PRESS on what might be called "Constructive Agriculture." In this department will be taken up various lines or work, including farm finance, marketing, crop production and handling, livestock breeding and care and many other subjects. The aim in all is to point out ways by which California agriculture could be helped. The present article deals with one method of aiding the poultry business. Other articles will take up vastly different matters, but all should be of interest to every Californian.—EDITOR.]

[By the ASSOCIATE EDITOR.]

Egg prices have come in for more attention this winter than any other food product, the consumer objecting to the prices he has had to pay and the producer objecting to the prices he has been paid. We have an idea that the professional poultryman of Petaluma, Haywards or elsewhere that there is a fixed relation between quotation and producer's price gets pretty good treatment. The general farmer, however, who has only a few hens and sells the eggs to the general store gets much less than he should, partly through his own fault, so the account of the success of the Tulare Co-operative Poultry Association is just an illustration of how easily and efficiently both the quality of the product and the prices can be improved.

This association is composed of farmers who have eggs to sell (not one of them a professional poultryman, but all of them simply keeping a few hens on the side), who sell the eggs and the poultry with their own selling machinery and buy their poultry feed and incidentals in the same way. It is the fact that it is a farmers' and not a poultrymen's affair that makes it important, for prices of eggs trail far behind those of poultrymen generally—so far that they don't even get the dust.

The Tulare Co-operative Poultry Association was started May 19, 1913, by men who were mostly stockholders of the Dairymen's Co-operative Creamery and could utilize the selling machinery of the latter to some extent. It is a stock concern, a share selling for \$25, one share one man, the shares being non-transferrable and drawing interest at 8%. The number of shares is unlimited so that new members can join at any time. The association started with about 40 members, had 85 a month or so ago, and keeps growing. A receiving station is kept in town where eggs are delivered and grain and poultry supplies distributed.

Everybody knows that egg prices to the professional poultryman, who makes a business of producing and marketing eggs of quality, are based on the market quotation, being perhaps a cent or two cents below quotation for the vicinity of San Francisco, and some other price if the Los Angeles quotation is used, depending on location, etc. However, the price to the professional egg producer is always very close to the market price. On the other hand, the prices received by the general farmer ordinarily are far below quotation, perhaps ten cents below. Just look at our market reports on next to last page and compare it with the last price that eggs brought and you will see it was the same in Tulare,

and is largely so yet with eggs sold through the old channels.

Now it happens that eggs are sold in exactly the same method as butter, the same wholesalers handling the goods, the margin of profit and expense being very much the same, and trade running parallel all the way to the ultimate consumer. The dairymen who were getting good prices for butterfat by selling through a co-operative creamery thought they could sell their eggs just the same way, get a price as near quotation as outter is and save the big loss.

The Dairymen's Co-operative and Riverdale Co-operative Creamery have established the Challenge Creamery & Butter Co. in Los Angeles as their distributor. The poultry organization arranged to send the eggs to the same place. Instead of being an agent for selling, however, the Challenge Creamery buys the eggs outright at agreed prices, selling them to the butter customers, which is a good thing for its business.

The price paid is based largely on the Los Angeles quotation. Thus when eggs are high, the price, delivered in Los Angeles, is about three and four cents above the case count quotation. When the quotation is down, it will be very little over quotation.

This makes the price vary in Tulare, so that now, while prices are high, the producer gets a cent more than quotation for eggs as delivered at the receiving station, while the price is a bit below quotation when prices are low. In comparison with this, grocery prices may run five or six cents below quotation, 10 cents below quotation not being unusual in country districts at times, as every reader ought to know. For example, the association was started on a Saturday when the Los Angeles quotation was 26 cents. Tulare groceries at that time were giving 14 cents. Monday they were offering 17 cents and in a short time 20 cents, simply to meet competition. As low prices are given in every general farming district.

This is not to blame the groceries, for many times farm eggs are so bad that the grocery would lose money by giving much more. The rule is to give a price that is fair for the poorest lot, and eggs that are better of course give extra profits. The farmer always has been noted for neglecting the egg business, and many farm eggs are bad, but the dealer would get into hot water if he gave one customer better prices than another, or told a farmer his eggs were as bad as they often are.

The eggs in this organization are graded at the receiving station, the farmer leaving a full, or partly full case, and taking an empty one away, with a record of grades of the empty case, the prices being based on the classification of the eggs. The grades are the standard ones of extras, firsts, selected pullets, dirties, etc. These eggs are being all candled and sorted at the headquarters in Tulare, are true to grade on receipt at Los Angeles and need no more handling, which is the reason for bringing more than quotation and by bringing full price they give greatly increased profits to members.

The standard of egg quality has also risen greatly. Stockholders brought in their cases a lot of dirties, and eggs that were kept too long in warm

places, and were rather excited when told that their eggs were largely of the cheaper grades, which was rather uncomplimentary and injurious to one's self respect as well as to the pocket book. There was no trouble, however, when they saw the eggs candled. The result is that the eggs are something to be proud of and of course prices deserve to be a lot higher. It is better all the way along. Eggs are bought from non-stockholders also.

The association also sells the poultry for members, but has as yet not developed a method of reducing the vast margin between prices to the consumer and producer, but is working on it. There is a little trade in dressed fowls from townspeople, but this is unimportant, and the poultry is shipped live in the usual channels. An attempt is being made to work up a trade in dressed fowls. There will be a saving of 10% shrinkage and a corresponding improvement in quality and furthermore a difference in freight rates by the express company will be enough to account for cost of icing and freight containers, so there is a good opportunity for improved poultry prices.

The association also does a big business in grains and feeds for members, the feed being used for the cows of members as well as for chickens. This trade runs about \$4000 a month.

There is a good saving to members in this, the business being done at cost, as is all the business, allowing expenses and 8% on capital stock. This has lowered grain and milled food prices all along the line in the county, as egg prices have risen with better egg prices to members. The latest proposition discussed is a hatchery to be run by the association.

The important point is, aside from the advantages in buying goods, that although the general farmer usually gets disgracefully low prices for his eggs, which prices are largely deserved through poor quality, by candling, grading and selling direct, the full market price is easily secured, poultry profits rise immensely and the standard of farm egg quality arises greatly also. The proposition is very simple, easy to put into effect, and a thing for the general farmer, not for the professional egg man, who gets nearly full market prices anyhow.

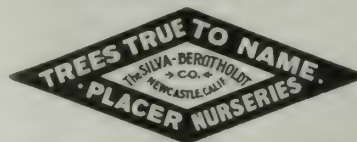
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How the Lemon Duty Was Reduced

Charges that a lemon trust exists in New York and has been maintaining an expensive lobby in Washington to bring about a reduction of tariff on lemons, are made in a suit for damages filed in the Supreme Court by William C. Armstrong, receiver of the bankrupt firm of Mercadante Regan Company, against the Sicula Americana, a steamship company, operating a fruit line between Italy and New York.

Armstrong says that for several years a combination of importers have been paying 4 cents on every box of lemons imported into this country and that this tax has gone to Washington to support a big lobby with agents in Congress, to oppose the efforts made by Southern California lemon growers to retain a protective tariff on the fruit.

The suit asks for the recovery of the money collected for the alleged lobby.

STILTS INSTEAD OF LADDERS.

To the Editor: Why not adopt this plan in orchards? It would be popular among the boys and they could use shorter stilts. I find the following in an English paper:

"Thousands of men in England earn their living during a considerable portion of the year by their ability to walk and work on tall stilts. Most of them are employed in the hop-fields of Kent and other districts, where they have displaced the high step-ladders formerly in use. During the pole-stringing season, the stilt-walkers,

twelve feet from the ground, perform the work with ease and without loss of time or motion. A trained stiltman will do the work of four or five men working with step-ladders." — A. CARTER, Sanitarium, Cal.

COUNTY AGRICULTURAL ADVISORS.

To the Editor: I write particularly at this time to inquire about an advisor in all agricultural work. I am told that in Humboldt county they have such an one who visits and directs the farmers in their work along the best lines. Kindly tell me something about it. Stanislaus county, the banner county for dairy interests, should have the best to be had.—J. C. Galloway, Modesto.

[You are right. All information about such advisors, how they are appointed and paid and what they are expected to do can be learned by corresponding with Prof. B. H. Crocheron, College of Agriculture, Berkeley.—EDITOR.]

BEST ALFALFA VARIETY.

To the Editor: Do you prefer American to German or any other alfalfa seed to plant in California?—A. T. G., Chico.

[We are not yet satisfied that any variety is better than the common variety. It is not American, however. The common variety came to California from Chile about 60 years ago.—EDITOR.]



CELEBRATING OUR 25th ANNIVERSARY

This is a photograph of our new office building, which adjoins the sales yard, on the famous Euclid Avenue, Ontario. It commemorates the 25th year of our successful development in the nursery business.

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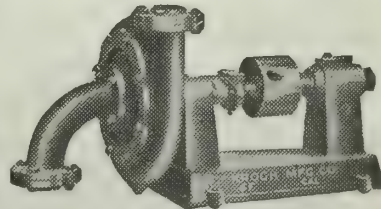
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New Type Vertical



New Type Horizontal

Getting Gophers and Squirrels.

[Written for the PACIFIC RURAL PRESS by WM. M. BRISTOL.]

The problem of exterminating—or at least of controlling—the gopher and the squirrel is put up to the agricultural editor with rhythmic frequency. With no feeling of egotism, but rather with a sense of duty to my fellow tillers of the soil, I make the assertion that the control of these two pests no longer constitutes a problem at the Way-up Ranch.

It is customary to trap the gopher and to poison the squirrel. In the ultimate working out of the problem we found this reversed; for we get all the gophers with poison and the last of the squirrels in a trap. As is the case with many successful operations the methods are simple. The gophers take the poison readily in conjunction with alfalfa and the squirrels go into our traps under the apparent impression that they are playhouses.

In preparing the gopher bait we take two or three stalks of green alfalfa—preferably that which is nearly ready to bloom and is therefore more palatable than that which is immature—double the upper ends over twice and tie in such a way that a fist-like tuft is produced. The leaves are then stripped from that portion of the stalks which is not a part of this tuft. A little stick, a bit of melon or juicy fruit and some powdered strychnine form the kit used in the further preparation of the bait. The end of the stick is dipped in the fruit juice and used to moisten the inside of the tuft. The moistened stick is then dipped in the strychnine and the poison is placed in the tuft, where it readily adheres to the moistened leaves. The tuft is then pressed so as to hold and conceal the poison—and the job is done.

In placing these baits the method is substantially the same as in setting traps. That is, the main runway of the gopher must be reached and this will be known because there will be an opening at each side of the excavation made by the shovel. A bait is placed, tuft end first, in each of these openings and the hole closed behind it with earth. If the hole is left open, or even partially so, the light enters and the gopher, seeing the light and scenting danger, approaches the opening pushing loose the earth ahead of him with which to close it; and in doing so he frequently pushes the bait to the surface, not only missing it himself, but leaving it where it may be picked up by some domestic animal.

Many people persist in using traps because, as they say, they like to see and be sure they have gotten the gopher. In using poison, however, it is not necessary to see the gopher in order to know that he is dead. That may be proved by opening the runways where the baits are placed 24 hours later. If, on the day following, the holes remain open, it is prima facie evidence that the gopher is dead and that you may safely write "hic jacet" over his mounds. For the last twelve years we have poisoned in this way every gopher that has appeared in a 40 acre orange grove as well as every one that has entered our small alfalfa patch and several times have dug them out to demonstrate that they were dead. Were I an alfalfa grower I should not hesitate to use the method in the field; for if proper care is used there is no danger whatever to stock. Concerning the squirrel, it is as-

sumed that every one poisons, in his own favorite way, every squirrel that will eat poison. In the story of the Pied Piper, however, there was one rat "who, stout as Julius Caesar, swam across, etc." and there are always a few squirrels to be seen scampering to their holes after the third or the tenth or the hundredth round of the poison-dispensing Piper.

These rodents of the charmed life, however, will enter a certain kind of trap as gaily as the children of Hamelin Town entered the portal under Koppelburg Hill; and that certain trap is simply the old-fashioned wire-cage rat trap, which is to be found in every hardware store in the land. We use the largest size which is about 14 by 22 inches and sells for about one dollar and a half. The trap-doors in the smaller sizes are not large enough for the larger squirrels—and it is usually the larger squirrels which escape the wiles of the Piper. We frequently find the whole family—"brothers, sisters, husbands, wives"—in the same cage at once. When it is considered that one of these traps is enough for an ordinary ranch and that the annual interest on the investment is only a dime it is plainly seen to be a good investment. WAY-UP RANCH.

Highland, California.

HONEY BY PARCEL POST.

C. W. Dayton of Owensmouth, California writes to Gleanings of his experience in shipping extracted honey by parcel post: I have shipped about 300 parcels, and have had but one leakage, and that happened where I put up three 12-oz. soldered cans in a sack loosely, without any other packing material for protection. And even then I believe the tin would not have loosened if it had been soldered as strong as it ought to have been. In soldering there should be enough solder put on to fill the groove nearly, not merely enough to stop the crevice. For 12 or 16 oz. tins I take 14 sheets of common newspaper, 12x8 inches, and wrap it around the long way and fasten with a piece of wire. Then I wrap four of these packages in another heavy wrapping paper and rope them tightly in all directions, twisting the twine at every crossing. I then put on the tag, and the package goes safely. Gallons and half-gallons I am sending out by mail nearly every day, and the recipients write me that there is safe and sound arrival.

The cans should completely fill the box. The gallons and half-gallons are the round-cornered square cans boxed with wood. They have 5/8 ends and 1/4-inch sides, thoroughly nailed. Then I wrap around each end a strong wire and twist it up tight with pliers. Then another short piece is put on for a handle. I also paste on the box my honey price list and a red label giving directions to handle with care. The postmaster also puts the packages in a special sack intended for fragile packages. Beekeepers should look after these affairs when mailing honey.

I have shipped these packages up to 10 lbs. to all parts of the United States and several foreign countries, and have complimentary letters from the receivers of the honey from these distant countries on the safe arrival of the honey.

The finest thing that has happened to bee culture in many a long year is the parcel-post mail privilege.

Obtainable Only from
**William P. Stark
Nurseries**

**STARK CITY,
MISSOURI**

Write for
Catalog



J. H. HALE'S Peach Wonder— Great Keeper—Great Shipper

Enormous Size—Round Shape—Highly Colored—Firm, Solid Flesh—
Unsurpassed for Canning—The One Great Peach for Western Growers

All Most Wanted Qualities

In size the J. H. HALE peach is like a small cannon-ball, one-third to one-half larger than Elberta; color a deep golden yellow, overlaid with carmine; smooth, thick skin, practically fuzzless; globular shape, excellent for canning; flesh firm and fine-grained—solid as a cling, yet perfect freestone; fruit ripens five days ahead of Elberta. Colors up a week to 10 days before maturing, allowing extra early picking. Owing to solidity of flesh, matured specimens can be allowed to hang on trees a week or more, extending the season at both ends.

Perhaps the greatest feature of the J. H. HALE peach is its shipping qualities. Specimens have been shipped from Connecticut into states as far distant as Florida, California and Texas, where they were kept 10 to 18 days after they were received. The J. H. HALE is solid enough to pack and ship in barrels. As a Western grower, you must realize the tremendous advantages such a peach holds for you.

OUR EXCLUSIVE CONTRACT

You can get genuine J. H. HALE peach trees only from the William P. Stark Nurseries, Stark City, Missouri. We are sole growers and distributors. These trees are propagated directly from buds cut by Mr. Hale from fruiting trees in his own orchards, and our exclusive contract guarantees you the

original, genuine, pure-strain J. H. Hale stock.

LOWEST PRICES ON "DELICIOUS" APPLES

No other apple is such a big revenue-producer as the Delicious. It has topped apple markets of the world for years. We have an exclusive contract with Mr. S. L. Hiatt, the owner of the original Delicious tree, to furnish us with all the scions and buds cut directly from the original tree. You can now secure direct from the William P. Stark Nurseries, personally selected one and two-year-old guaranteed Delicious apple trees at growers' prices. Save 30% to 50%, and get best trees.

NO AGENTS—SAVE 1/2

Our catalog is our only salesman. We have no agents, no solicitors. Thus we save you one-third to one-half, and you are sure of getting what you order. All trees doubly guaranteed true to name, healthy, well-rooted, and vigorous sturdy growers.

120-PAGE BOOK SENT FREE

Prices in plain figures. Lists all worth-while apples, peach, pear, plum, apricot, quince, cherry trees, grape, currant, gooseberry, raspberry, blackberry, roses, shrubs and ornamentals. Mail the coupon below and get the advantage of direct-from-nursery prices.

We ship direct to California customers. Our trees pass all requirements of inspection laws. Safe delivery guaranteed.

William P. Stark Nurseries
Station U 23 . Stark City, Missouri

WILLIAM P. STARK NURSERIES
Station U 23, Stark City, Missouri

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Please mail me your 1914 catalog. I am interested in

..... J. H. HALE Peach Delicious Apple
..... Apples Plums Shade Trees
..... Peaches Cherries Roses
..... Pears Bush Fruits Ornamentals

..... Approximate number of trees desired.

Name

Address

Intensive Farming Conditional.

[Written for the PACIFIC RURAL PRESS
C. S. KNIGHT, Professor of Agronomy,
University of Nevada.]

With the rapid increase in population we note a steady movement from the eastern and central States to the agricultural lands of the west. This has been an important factor in driving the range farther and farther west, by the increase in the land values. Large areas of land formerly used exclusively for range purposes have been sub-divided into smaller holdings and used for crop production, and now it has become an established fact that land which is adapted to the production of crops cannot be profitably continued as a range for live stock.

The great problem with the majority of these new land-holders is what crop to grow with the greatest profit, and what use can best be made of these crops. A mistake which too often occurs is the introduction of methods entirely too intensive for the profits received. This condition has largely arisen from a class of farmers coming from a farming district where land values are high, where the average farms are small, ranging from twenty-five to eighty acres, and where crops are expensive, and it is desirable to obtain large yields per acre and heavy production per cow.

These farmers will find in most cases that their ideas of farming are entirely too intensive for the new region. In the former locality where land is expensive, intensive methods are necessary for a profit, while in the new district where land is cheap and labor is high, the farmer is compelled to use more land and less labor, thus obtaining good returns per acre at a small cost, in order to compete with the farmers of the region and realize a good labor income. Because the farmers of the region produce crop yields only two-thirds as great as those in the more eastern districts, many of the newcomers are prone to assume that the farmers of this new district are a shiftless lot, and soon begin a campaign to increase the production per acre of important crops and demonstrate to the old settlers how to make money. In part they usually accomplish their end—that of growing larger crops than the average for the region, but too often it occurs that when the expenses are accounted for, too much labor has been used and the expenses are so great that they fail to realize the average profit of the farmers in the community.

If the new settler happens to come from a district where intensive dairying is practiced, one of the first things he looks for is the silo, because every up-to-date dairy in his former district owned a silo. He is informed by one of his new neighbors that the dairy industry has sufficiently developed and that the herds are too small to warrant the construction of silos. He nevertheless arranges for the building of a modern silo on his farm with an idea of demonstrating to the farmers of the district a method of securing greater returns from his cows during the winter months, by feeding silage. At the end of the year his books undoubtedly show a greater production per cow, but the total profit per cow may be less than the average for the district, due to the high cost of construction and the extra labor involved in handling the silage crop. In the majority of new farming districts of the west, hay is very cheap, and until

the region has shown considerable development, it is usually more profitable to feed the cheaper products with little expense, although the returns are not as flattering, than to use expensive feeds with such high costs of handling.

The newcomer is more accustomed to farming a sixty-acre tract, while his new holding probably includes 160 acres. With the money received from the sale of the small farm he purchased the larger tract in the new district. In farming cheap land where labor is expensive, it is usually most profitable to crop a large acreage with little extra labor involved, that is, the farmer can better afford to waste land than to waste labor in the production of his crops.

One type of farming is not generally more profitable than other types provided each type is conducted where it belongs. About the same amount of capital is involved on the 160-acre tract in one locality as on the 60 acre farm in another locality, although to realize the greatest profit under the existing conditions different kinds of farming must be practiced. In the new region hay can be purchased for one-half of what it brings in the eastern district, for which reason a silo may not be a profitable investment for the new farmer; however, as the population increases, land rises in value and hay and other feeds become more expensive, the silo will be in general use throughout the dairy districts of the west.

It is true that most farmers are not growing as large crops as their conditions warrant, although some are growing larger crops than it pays to grow. Generally speaking, as the population increases it pays to gradually intensify the methods of farming in the west.

THE WORLD HAS NO LACK.

Figures on world production for the present year cabled from the International Institute of Agriculture at Rome, including the principal countries of the Northern Hemisphere, were as follows:

All wheat, 3,569,000,000 bushels, being 8.9 per cent more than last year; all rye, 1,828,000,000 bushels, 1 per cent less than last year; barley, 1,524,000,000 bushels, 7.7 per cent more than last year; oats, 4,571,000,000 bushels, 2.3 per cent more than last year; the foregoing including the production in Austria, Germany, Belgium, Denmark, Spain, France, Great Britain and Ireland, Hungary, Italy, Luxemburg, Netherlands, Roumania, Russia in Europe (63 governments), Switzerland, Canada, United States, India, Japan, Russia in Asia (10 governments), Algeria and Tunis.

The total production of sugar beets was 54,992,000 short tons, 2.5 per cent more than last year, in Belgium, Denmark, Spain, France, Italy, Netherlands, Roumania, Switzerland, Canada, United States, Prussia, Hungary, not including Croatia and Slavonia.

The total production of cleaned cotton was 9,296,000,000 pounds, 2.1 per cent more than last year, in the United States, India, Japan and Egypt.

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Groceries**

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Send for free catalogue
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goods you are paying
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Benicia Orchard Disc Plows

are specially made
to meet California
conditions.

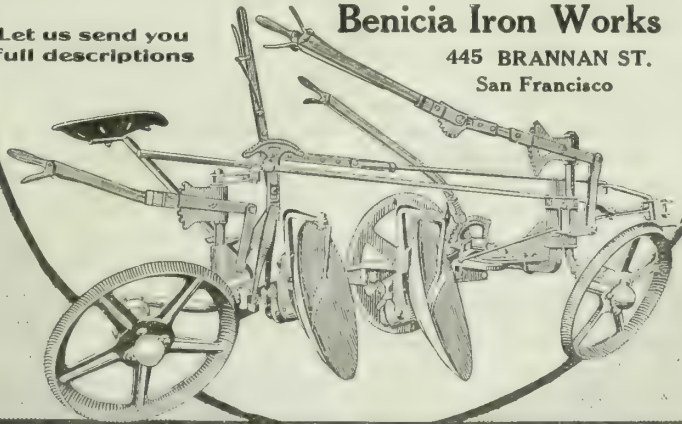
The Best and Most Practical Plow Made

Contains every feature which is best suited for California Orchard work. The automatic steering device keeps the plow in the furrow, allowing for **plowing close to the trees**. This is the only disc plow available for use behind a small tractor—one man operating both tractor and plow. Discs can be changed in a few minutes from 1 to 2, 3, 4, 5, or more and vice versa. They can also be regulated to plow any desired depth (down to 10 inches) and width (to 12 inches). A Benicia Orchard Disc Plow won't tip over. It rides easy as a wagon, due to a tongue made of spring steel. It pulverizes the soil and **goes through hardpan** like a knife through butter. All parts are guaranteed and will stand the hardest strain. No trouble or breakage on account of loose nuts, as lock washers are used. Ask anybody who has ever used a **Benicia Orchard Disc Plow**. You'll get information first hand that way.

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full descriptions

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We manufacture the famous Ortho Sprays. Ortho Lime Sulphur is the safest, surest, strongest spray on the market.

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We can save you money on supplies. Write us.

California Spray Chemical Co.
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Prompt shipment, our motto.

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Sewer casing and standard pipe fittings and valves.

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PACIFIC PIPE CO.

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Forkner Orchard Cultivator



Does more work with less cost and leaves a better surface mulch than any other cultivator made.

It Works Right Up To Your Trees

Cultivating the entire surface beneath low branches without disturbing boughs or fruit. Write for catalogue and free book "Modern Orchard Tillage".

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Improved machinery and methods enable us to sell you this pump for less than you can buy any other make. Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

AGRICULTURAL REVIEW.

With the Fruit Men.

The California Associated Raisin Co. has cut prices slightly on raisins intended for export trade.

George Covell has purchased the 300-acre vineyard of Byron Bearce near Escalon.

One of the largest plows ever manufactured has been purchased by E. D. Marsellus, of Chico, who will use it in preparing his land for fruit trees.

It is claimed that olives that appeared to have been injured by frost in Butte county have filled out as well as ever on account of rains and moist weather.

The Tulare Canning Co. has taken up the business of canning olives.

There is a report that there are 4000 tons of dried peaches and 5000 tons of prunes in the hands of packers in California.

Everything points to a very large peach crop in the San Joaquin valley, according to a leading fruit man. Systematic spraying has greatly decreased blight and other peach pests.

The Whittier Walnut Growers' Association shipped 650 tons of walnuts this year.

Dr. C. L. Marlatt, chairman of the federal horticultural board, has asked for added appropriations to help keep out the Mediterranean fruit fly.

Examinations for county horticultural commissioners have been held in several counties recently.

Irrigation Matters.

The petition to call an election for the formation of an irrigation district in Butte county has been issued, approved, and is ready for the favorable action of the supervisors.

A Lake county taxpayers' association has been formed at Middletown to forward the interests of Lake county in irrigation rights.

Data have been gathered on advantages and needs for a reorganization of irrigation arrangements in Fresno, Kings, and Tulare counties, and a meeting has been called to arrange for a big water users' association in Fresno this Saturday. This is to precede the formation of irrigation districts over that part of the country.

E. P. Moore has struck an artesian flow of water at 300 feet on the Chowchilla ranch. The flow is estimated at about 45 miner's inches.

A tax bill on the La Grange dam has been presented to the Modesto and Turlock irrigation districts by Tuolumne county, and surveys are being made to determine the county boundaries. It is not thought that the bill will stand, owing to laws regarding irrigation districts.

The orange growers of Lindsay and other northern districts have been preparing for the National Orange Show at San Bernardino, intending to take all the prizes that the law allows, if possible. From all the citrus districts for that matter, great efforts are being made to make a fine display at this show, which seems sure to be the best ever held. Pomona, Lordsburg, Claremont, and Covina are leading districts in Los Angeles county which have reserved space. Riverside and Corona, in Riverside county, are to make large displays, as well as Redlands, Highland, East Highland, West Highland, Upland, Rialto, Ontario, Etiwanda, Bloomington, and Fontana in San Bernardino. Orange and San Diego counties will also be well represented. The California Press Asso-

ciation has accepted the invitation of the Show to attend, and will come in a special train. The show will be held February 18 to 25.

Agriculture in General.

The Secretary of Agriculture has issued two orders relating to the admission of foreign potatoes. One permits the importation of disease-free potatoes from districts uninfected with certain serious diseases. The other establishes a quarantine over Europe, Canada and other sections where powdery scab and other diseases exist. The quarantine may be lifted from certain districts if found to be free from disease.

It is stated that \$100,000 worth of rice is standing in the Sacramento valley, harvesting having been prevented by rains. About 65 to 75 per cent of the crop will be saved. Ducks are doing a great deal of damage to what is not harvested.

On the Moulton property in Colusa county Italian rice averaged 4400 pounds per acre, Japanese varieties going 5600 pounds, the quality of the latter being superior also. One field averaged 7390 pounds per acre, being from selected Japanese seed.

A number of farmers in Los Alamos, Santa Barbara county, will plant lima beans for the first time next year.

The Alameda Sugar Co.'s mill at Alvarado will not be operated in 1914, according to present reports.

J. M. Culberhouse and O. J. Koch have bought 90 acres northeast of Clements, San Joaquin county, and will put out 65 acres to hops.

The Turkish tobacco crop of California amounted to 600,000 pounds this season, valued at \$300,000.

A cotton-picking machine invented by W. R. McComb was recently tried out in the Imperial valley. If it proves successful it will be a great aid to the industry.

It is estimated that 80 per cent of the grain land in Livermore valley and vicinity is already planted.

A 60-acre vegetable ranch will be established at Rainsville, Sonoma county, by a large vegetable company of San Francisco.

Crops of the Truckee-Carson Project.

Prosperity is shown by the report of crop production on the Truckee-Carson irrigation project in Nevada. The value of products in 1912 was \$469,882, and in 1913 it had increased to \$555,007.30. Details of crops follow: Alfalfa, 13,960 acres, average yield 3.23 tons, average value \$7, best yield 7 tons. Barley, 1880 acres, output 431,238 bushels, value per bushel 60c. Sugar beets, 1079 acres, average yield 8.76 tons. Hay (not including alfalfa), 3467 acres, 4001 tons, value \$7 per ton. Pasture, 18,352 acres, value of crop \$36,457. Potatoes, 416 acres, 29,789 bushels, average yield 71.61 acres, maximum yield 700 bushels obtained on the T. R. Harper ranch; average value \$22,341.75. Wheat, 1590 acres, 30,271 bushels, value per bushel 80c. New alfalfa, 4859 acres. The amount of land seeded to alfalfa within the project during 1913 is 4523 acres. Minor crops are not included in the above. The total number of farms within the project is 494, comprising a total irrigable area of 52,039 acres, of which 43,075 acres were actually irrigated. There are 30,857 acres under contract for government water

Now is the Time
To Plant

TREES

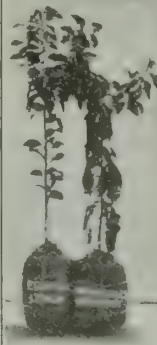
Millions
of Dollars

are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

A Splendid Income

provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection. Call and talk it over with us, or write for our 1913-14 catalogue.

Smyrna Park Nurseries, Inc., Ceres, Calif.



OUR NINE MONTHS OLD

Orange, Lemon and Marsh Seedless Grape Fruit, the finest in the State, average $\frac{5}{8}$ to $\frac{3}{4}$ inch at the present time.

Our buds were taken from orchards that produce almost two thousand dollars an acre. A complete line of Apples, Peaches, Apricots, Plums and all deciduous fruits and nuts.

SAN FERNANDO NURSERY CO.,
San Fernando, Cal.

Write for prices.



DO YOU RAISE ALFALFA?

If you do, remember that you can obtain much larger crops by using 200 lbs. per acre of Mococo Superphosphate.

Alfalfa needs Phosphorus and Lime, the two elements in which Mococo Superphosphate is so rich.

THE MOUNTAIN COPPER COMPANY, Ltd.,
332 Pine Street, San Francisco.

Nearly new "Superior" Grain Drill for sale at Hickman, Stanislaus County.

ROCHE HARBOR LIME

excels all other for Spraying. Free from grit. Will not precipitate while in solution. Will not wash off when applied. Universally used for all purposes. Handled by all dealers.

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GOOD NEWS!

POLLARD BROS. in the market again with FULL STOCK A-1 CITRUS TREES. Be safe—write for catalog and prices and order early.

POLLARD BROS.
SOUTH PASADENA, CAL.

FLORIDA
SOUR
ORANGE

SEED-BED STOCK
grown without shade, as are ours this season, are vastly superior to those grown under shade.

GROWN
OUT DOORS

They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencia, Lemons and M. S. Grapefruit. Order now.

SOUTHLAND NURSERIES, F. H. DISBROW, Proprietor.
2141 East Colorado Street, Pasadena, California.

rights and unsettled vested water rights total 12,218 acres. The total cropped area of farms reported amounts to 42,943, and the grand total irrigated last summer was 43,075.

With the Citrus Men.

Orange-growing near the foothills of Stanislaus county is stated to have been very successful this year and is encouraging renewed interest in that line.

Frank F. Chase, of Riverside, was recently presented by the California Fruit Growers' Exchange with one of the finest gold watches to be obtained in reward for his gift to citrus men of his invention on grading out frosted fruit.

Irrigation from Kings River.

The great extent of public irrigation in the southern San Joaquin valley is shown in a statement issued last week for the purpose of helping in the reorganization of the irrigation properties into several large irrigation districts. These will be:

1. Fresno district, comprising 265,000 acres, of which 220,000 acres were irrigated in 1913. This is watered from the Fresno canal system.

2. Kings district, of 216,000 acres, of which 120,000 acres were irrigated in 1913. This is watered by People's, Last Chance, and Lemoore canals.

3. Laguna district, west of Laton lands, under Crescent, Stinson canals and in Burrell and James Ranches, comprising 173,000 acres, 90,000 being irrigated.

4. Consolidated district, irrigated from Consolidated canals, comprising 190,000 acres, 90,000 now being irrigated.

5. Alta district, east side of Kings river, comprising 130,000 acres, of which 90,000 are irrigated.

6. Tulare lake (reclamation and irrigation) covered, in 1909, 143,000 acres. The seepage from other districts onto this is estimated at 200 second-feet.

The total acreage irrigated in above in 1913 was 610,000 acres out of 1,117,000 in all. There would be required 4850 second-feet and 1,746,000 acre-feet of water.

Miscellaneous.

Shipments of goods that cleaned up the season's run of the Winters Cannery Co., of Suisun, were made last week. Much of the fruit was sent to Europe.

Putah creek overflowed its banks recently for the first time in years, the floods being due to torrential rains in the mountains.

A branch of the Farmers' Educational and Co-operative Union was organized last week at Fairmead. H. G. Williams is president and H. E. Verbaum secretary-treasurer.

The 1000-acre Kinnucan ranch, near Turlock, which is valued at \$215,000, has been sold to Los Angeles parties.

Dr. P. B. Kennedy, for years the head of the department of horticulture and forestry at the University of Nevada, has accepted the position of assistant professor of agronomy at the University of California, and will enter upon his new duties next week. Dr. Kennedy has been doing some special writing for the PACIFIC RURAL PRESS, one of his articles appearing but three weeks ago.

The Walton properties in Sutter county have been taken over by the newly organized Walton company, capitalized at \$100,000.

Fruit Marketing at Winters.

[By the ASSOCIATE EDITOR.]

Winters is in the southwest corner of the Sacramento valley and on a branch line of the Southern Pacific where few people go unless they have special reasons for so doing. Thus it is, in a way, a little principality by itself, and the agencies for marketing of the fruit produced have developed more independently than they would have done if the district had been subject to the influences of other fruit districts around it. The story of what has developed, especially in the Winters Dried Fruit Company, is interesting in showing several things, among which are the benefits of having a local marketing agency, the ways that good prices may be developed otherwise than by co-operation, and a few other things. There are three organizations in town over which fruit growers can feel a certain proprietary interest and which together can look after all fruit in all forms, fresh, canned or dried.

The first of these and the most important is the Winters Dried Fruit Co., a stock company with certain co-operative features, the Winters Canning Co., an out and out stock company, and the Winters Fruit Growing Association, an out and out co-operative concern, handling fresh fruit and shipping through the California Exchange.

Co-operation is very often more or less of a fizzle, though to be striven for if properly organized and conducted. Yet there are other ways of obtaining the same end, and one of the best is a regular stock company with the growers' money as the motive power and men with money who know what good business is to see that things are properly conducted. That is the way the Dried Fruit Company is organized and conducted and that is the most important organization of the three.

The start of this was due to a feeling (common all over) that fruit marketed by the men that grew it should be handled with growers' interests a little more at heart than when handled by the ordinary packer, so five of the leading growers got together in 1902 to form this company on a purely stock basis. They would have taken others in with them, but others fought shy. Before this, in fact, there was a company formed with two or three of these growers and a San Francisco firm, but the interests of the two were hardly in harmony, and when the warehouse at Winters burned down the company dissolved by mutual agreement, and the growers, knowing the advantages and methods of selling their own fruits, decided to go it alone.

Since 1902 other growers wanted to get in, too, and the five original members divided their stock with new members, until now the membership numbers about 45, all fruit growers. The stock sells for any price that a stockholder cares to put upon it and the capital itself is \$30,000, so it can be seen that it is to all intents a straight commercial organization. The essential point is that the profit always is figured to come out of the fruit, not as dividends, and if the chance would come for the company to make \$5000, but in the deal the growers as growers would lose \$5500, such a chance would not be taken. It can be imagined how long an ordinary company would hesi-

tate to let the market go to ruin if more dividends could be secured, which only goes to show that the aim of an organization, formed on a purely stock

(Continued on Page 23.)

- Lowest priced
- Simplest
- Most reliable.

The Bolton Orchard Heater supplies the needs of the large orchardists on account of its reliability and its efficiency. It is good for the small orchardist because of its low price and cost of installation.

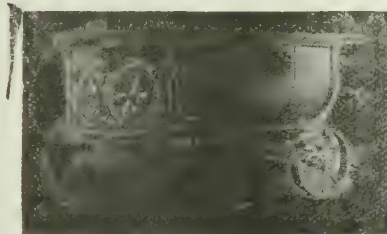
200,000 sold in one season. Hundreds of orchardists using and recommending the Bolton Orchard Heater. Their words of praise are worth more than anything we can say. One man can light 100 in five minutes.

Send for booklet R.P. It contains information about orchard heating—names of prominent orchardists who are using it and facts not generally known and which are suppressed in high priced heaters. Send today.

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HARDIE SPRAYERS



The Sprayer with the trouble left out.

Power Sprayers, Barrel and Bucket Pumps, Rods, Nozzles, Hose, etc.

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320 Market St., San Francisco.

CITRUS Trees



We have a magnificent stock of citrus trees in all varieties.

ORANGES LEMONS

also a fine stock of

OLIVES

and invite your inspection and inquiries.

We have also growing a full line of DECIDUOUS FRUIT AND ORNAMENTAL TREES, PLANTS, VINES, ETC. Our stock being all grown in the choicest spots of California—under perfect soil and climatic conditions—insures its being strong and thrifty and giving best results.

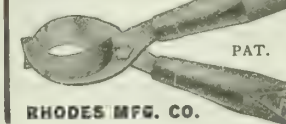
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Descriptive Price List covering all varieties of trees and plants will be ready soon. Shall we send you a copy when ready?

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RHODES MFG. CO.

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DATE GROWING

Just issued—a complete treatise on Date Growing; 300 pages, 40 illustrations. The only book published which gives a full, clear and practical account of growing the Date Palm. \$2.00, postage 16c.

WEST INDIA GARDENS,
Altadena, California.

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station \$1.96½ gave \$22.11—over 1000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 lbs. of phosphorous, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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300,000 FIRST-CLASS ORANGE SEED BED STOCK.

Ready for delivery. Genuine Florida Sour Stock. Sweet Stock grown from carefully selected California seed. Clean, vigorous and thrifty. Correspondence solicited.

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As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

COW MANURE.

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429 DAVIS STREET, SAN FRANCISCO, CAL.

Agricultural Review of 1913

[By the ASSOCIATE EDITOR.]

The year that has just passed will be remembered for many interesting and outstanding features, that in certain ways will bring to mind also the superstition relating to the number "13." Nevertheless it was a year to look back to with a certain measure of congratulation. Certain fundamental things seemed dead against the California farmer, yet when the books were balanced it was found that it was a pretty good sort of a year after all and when a person prospers with most everything against him, he can truly congratulate himself and feel that he is on a sound financial footing.

The very first week of the year brought the most severe frost of history to put our citrus industry to its supreme test; as spring wore on rains held off save in a few districts, to give us one of the driest years known and one that followed two dry years; then spring frost hit deciduous fruits, and to top it all, for the whole year, great financial stringency and depression endured throughout the nation and world. Apparently a worse combination would be hard to find, but as was said before, California agriculture came through with colors flying as proudly as reason could hope for.

With the extreme drouth and frosts it has been wonderful how good many crops were; with the great financial depression, it has been amazing how satisfactory prices have been, especially with certain crops which that the previous year appeared to face extremely discouraging conditions.

THE BIG FREEZE.—The first great event of 1913 from an agricultural standpoint was the big freeze, practically unprecedented in history, where a body of cold air moved down bodily from the Arctic, drawing off all normal heat from air and soil, and causing freezing temperatures in several instances in daylight among our citrus groves, while during the night the mercury dropped perhaps 10 degrees or more than on the coldest nights of normal winters.

That freeze gave the strongest possible proof of the sound foundation of our citrus industry, the only industry open to injury from cold in mid-winter. In the first place systematic public and private frost fighting in certain places showed how the coldest temperatures could be withstood. Secondly, although many unprotected trees were killed or severely cut back, the surprising way that other trees thought to be almost ruined revived and bid soon to be themselves again, shows that no permanent crippling of our citrus industry can be expected.

In the fall of 1913 northern orange groves bore their largest and finest crop. Prices were discouraging and only indicate the fault of shipping immature fruit. If it will make growers hold the oranges till they are fully ripe, the poor prices of the fall of 1913 will have taught a good lesson.

DECIDUOUS FRUITS.—In spite of drouth and spring frosts, deciduous fruit crops, as compared with the average, were good; prices, considering conditions, excellent.

The production of 1912 was a wonder, so a comparison with 1913 will show how well we did. The table includes both deciduous shipments from the north of the Tehachapi and tons dried. The latter are largely esti-

mates and will be given more correctly later:

Variety.	Cars shipped fresh.		Tons dried.	
	1912.	1913.	1912.	1913.
Apples .....(not included)			3,500	3,000
Apricots 195 1/2		158 1/2	18,500	10,000
Cherries 244 1/4		180 1/4		
Figs			5,200	3,500
Grapes 6,354 1/2		6,363 1/4		
Peaches 1,634 1/2		2,359	27,000	28,000
Pears 3,134 1/2		2,495 3/4		2,500
Prunes			97,000	45,000
Plums 1,775		1,706 1/2		
Raisins			85,000	65,000
Sundry 15 1/4		18 1/2	3,000	
Totals 13,343 3/4		13,331 3/4	239,000	156,000

In 1912 dried pears are included in the miscellaneous column.

Some other crops were as follows: Almonds, 1912, 3000 tons; 1913, 1200 tons; walnuts, 1912, 9,250 tons; 1913, 11,000 tons. The olive output is said to have run about 1,125,000 gallons of pickles and 1,000,000 gallons of oil. The crop was well above normal and prices extraordinarily good. The wine output was large and prices far above those of late years.

DECIDUOUS PRICES.—The bad financial conditions were practically overcome in the fruit business by short Eastern crops and a fine demand for fresh fruit. The prices for nearly everything named, fresh and dried, were excellent, so that in some ways 1913 was the best season for years. Peaches were in the dumps all along the line, but a hungry market took lots of these and helped the prices of dried peaches somewhat. What is equally important, the market on most things is very nicely cleaned up for the coming season.

Grapes especially did well in 1913. In 1912 table grape prices were awful, wine grape prices as bad and raisin prices discouragingly low. This year in spite of the big grape shipments, prices were excellent, wine grape prices went up strongly to a satisfactory figure, and the spectacular success of the California Associated Raisin Company has given raisin growers excellent prices, has moved the crop smoothly and without worry to growers, and starts the new year in an unassailable position and with no uncomfortably big hold-over. Prune prices were extraordinarily high.

Peaches now are no worse than table and raisin grapes a year ago and the outlook for developing markets and success by growers' organizations as promising as with raisins a year ago, goes out with either past or prospects all along the fruit line quite pleasing.

FIELD CROPS.—The fruit crop being shorter than in 1912, the cannery output was generally less than usual with fruits. Annual crops for canning or otherwise, owing to lack of moisture, were mostly even shorter proportionally than fruit, but large crops that gave low returns in 1912, like potatoes and onions, were very profitable in 1913 with a more moderate production. The lima bean output was one of the largest and best ever secured, and markets have been good also. Other beans did not do so well.

Wheat and barley nearly all over the state were next to a total failure, hay so short as to make prices soar far above normal. Lots of grain either did not come up, or never did any-

thing. This leaves an exceptionally large amount of summer fallow, and our fine fall rains should make 1913 do its part to make the grain crop of 1914 in all probability one of the big-

gest in recent California history.

gest in recent California history.

ALFALFA AND DAIRYING.—Alfalfa in 1913 was called upon to make up in part for the grain hay shortage and alfalfa prices broke all records so that the man with alfalfa to sell has prospered and waxed wealthy. The alfalfa output per acre was less than usual, owing to rather diminished irrigation supplies and scant rainfall, but through increased acreage was nearer normal than other products. It was hardly enough for both dairying, heavy city demands and extra cattle feeding to make up for the grass shortage. The butter output therefore, though it seems to have been larger than in 1912, did not increase as in previous years, dairy cattle prices fell and sales were frequent. However, butter prices advanced as did alfalfa prices, making dairying as profitable as ever.

A striking point about California dairying in 1913 was the great advance in dairy methods. Never before were so many purebred herds started, or such a great improvement made in established herds. Purebred swines have been in equally big demand and the standard of dairy and other livestock has risen greatly, as have dairy methods in other ways.

BEEF AND MUTTON.—Our range interests suffered in 1913. The winter was so dry that by spring it looked as if half starved cattle would have to be thrown on the market. Some spring rains came just in time to make some good grass and with the help of alfalfa and other feeds cattlemen were able to get their stock on the market in good condition and without any demoralization of prices, though in many instances it was a close shave. The general meat scarcity naturally made prices of all kinds of meat good, though the determination of Congress to have free wool depressed not only wool, but mutton prices as well. The close of the year finds the sheep business still depressed, the beef business with a fine outlook, though stock naturally very short. The past season has seen great progress made in the introduction of fine beef cattle and mutton sheep, as has been the case with dairy stock and the same thing holds true with draft horses.

PROGRESS IN GENERAL.—Great strides in irrigation and reclamation development have been made. Never before have so many wells been sunk and so many pumping plants been put in. Never before has there been so much feeling in favor of public irrigation and so much done in the way of the formation of new irrigation districts in many parts of the state. In the legislature work has been done that

put the issuing of irrigation bonds and the formation of irrigation districts on a better basis; progress has been made both materially and legally; we are irrigating more land and making irrigation business go along better.

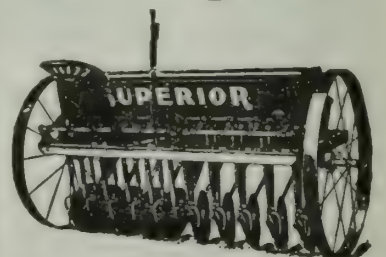
California agriculture in 1913 has faced legislative problems both in state and nation. The farmers have had an eight hour law to fight, compulsory accident liability to employees, and other adverse legislation, which fortunately in nearly every instance has been defeated. Other excellent legislation or appropriations that would greatly aid agriculture failed when success appeared certain. In general, however, the farmer profited rather than suffered by the action of our state law makers in 1913. He certainly made his influence felt, which is one good thing.

Congress by making a sweeping reduction of the tariff lowered the duties on California products more in proportion than manufactured products, and left California agriculture worse than might have been hoped. Wool was hardest hit, lemons and olive oil suffered, New Zealand butter was let in under conditions that for the first time materially reduced winter butter prices. On the other hand a strong attack on our wine industry was foiled.

A wonderfully fine constructive work was started through both State and National legislatures in farm finance, which when carried to a successful conclusion should outbalance all adverse legislation in State and Nation. The commission sent to Europe by California and other States and the attention to agricultural finance bid fair to put the farmer in a position where in obtaining money for farm operations he will be on as good or better footing as the merchant and manufacturer.

Our great co-operative institutions have prospered and become stronger, our industries are on a better footing as a rule on account of 1912, our land has been more developed and fitted for new settlers, immigration of fine quality has come in, the Panama Canal has been practically completed and the winter has started off in a way that promises the best kind of a year in 1914.

The "Superior"



The name of our Grain Drill tells the story—"SUPERIOR." Furnished with 6 or 7 inch spacing. Do not forget our SPECIAL ALFALFA DRILLS. 20 discs 4 inches apart. Write for prices and catalog.

THE H. C. SHAW COMPANY
WHOLESALE DISTRIBUTORS.
Stockton, Cal.

Stump Pullers

California Stump Puller Company

704 Bryant St., San Francisco

With the Live Stock Men.

It is reported that hundreds of cattle are starving in the Coast Range mountains on account of the recent heavy snows in that district.

J. C. Pitcher of Duncan Mills visited this office last week in search of purebred Berkshires. He stated that the range in that district the past summer was better than it has been for years and as a result cattle men there had an exceptionally good year. He also said that he intends erecting a silo next year which will be used as an experiment in beef finishing.

Guy Merrill, formerly of Willows, shipped 48 head of horses from Klamath Falls, Oregon, to Oakland recently. It is thought that the generous rains that have visited California this fall will make the horse market more active than it has been for the past two years.

One of the largest and practically the last shipment of wool leaving Nevada this season was started over the Western Pacific last week. There were five carloads of it which sold for 10 cents a pound, the cheapest price received for many years.

A carload of registered Duroc hogs was shipped into Tulare county last week by A. M. Thompson, of Imperial county. They will be sold and let out on shares to farmers in the Farmersville district.

Three entirely new mountain ranges will be opened up to stockmen in the Shasta National forest the coming year according to Supervisor Hammatt. In order that applications may be approved before the grazing season begins it is absolutely necessary that old as well as new petitioners should send their applications to the Sisson office before February 15.

Three dairymen near Visalia were fined \$25 each last week for failure to observe proper sanitary conditions.

H. A. McNeil is planning on planting his 120-acre ranch near Thalheim, San Joaquin county, to alfalfa the coming season and renting it out in 40 acre tracts to dairymen.

Reports from Fallon, Nevada, state that the Churchill Creamery of that place intends to erect a model dairy barn on their holdings near that town. It will be equipped with all the up-to-date equipment and is being built with the idea of demonstrating to the dairymen of that section what the benefits of sanitary equipment are.

Several stockmen of Oakdale, Stanislaus county, have just returned from a trip to Mexico where they purchased 39 carloads of cattle. The party state that many of the stockmen of Mexico who fled from that country when the rebels entered are now returning and that while a great deal of damage was done the trouble seems to be about over at the present time. The cattle that they shipped will be used for fattening.

The annual meeting of the stockholders of the Salinas Creamery was held last week when it was announced that the business had been good for the past year and the regular dividend was declared.

In its last report for the year of 1912, the Bureau of Animal Industry

gives the following totals of certified cattle imported to this country for breeding purposes: Alderney 49, Ayrshire 415, Dexter 60, Guernsey 593, Hereford 5, Holstein Friesian 10, Jersey 461, Shorthorn 95. The number of bulls amounted to about 10 per cent of the total.

Messrs. Mason and Jerome of Watsonville received last week from Oregon a shipment of purebred Ayrshires consisting of four cows and a bull. This will be used as a foundation herd on the Santa Marie Rancho.

Appropriations of \$40,000 were made by the board of directors of the American Short-horn Breeders' Association at their meeting held in Chicago last week. This is somewhat larger than the amount appropriated last year and will be used largely for premiums at the fairs and live stock exhibitions the coming year.

The new plant of the Orland Creamery Company has recently been completed and is now turning out about a thousand pounds of butter daily. Although not large, it is said that it is strictly up to date, being made of reinforced concrete.

The fear of cheap meat importations from Argentine and Canada does not seem to be carrying out as some would have us believe. A recent dispatch from New York says that the shipments from South America were smaller in November than they were the month previous and that indications point toward a still smaller amount this month. Fat steers are said to be worth more at Toronto, Canada, than they are at the Chicago market, so it is not feared that the Canadian cattle will hurt our markets.

The A. J. Macy ranch near Chico has been leased to the Bettencourt Bros., who will establish a modern dairy on the place and may eventually establish a certified plant.

R. B. Peters of Los Angeles, on his return from the International Live Stock show, stopped over in San Francisco long enough to tell us that he intended to secure a lot of purebred Angus cattle from the East with which he will found a herd on his ranch in the Imperial valley. Mr. Peters thinks the chances are now exceptionally good for beef production in California. In the Imperial valley, he states, the acreage devoted to cotton growing is gaining very fast, as growers have been making good money in that line for the past two seasons.

While the run of cattle at the Portland Union Stock Yards was light during Christmas week, the quality was fairly good, with prices ranging from \$6.25 to \$8.10, the bulk going for \$7.50. A short run of poor quality hogs were the main factor in the week's business prices closing at \$7.65 with an outlook for a better market after the first of the year. A good strong demand was felt for lambs at \$6.50. Good strong ewes and wethers are quoted proportionally for the same quality.

Six field inspectors are working on squirrel eradication in the Salinas valley near Chualar, Gonzales, and Soledad. Good work on eradication has been accomplished.

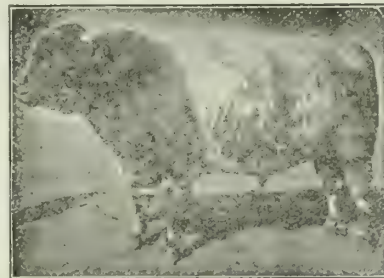
Belgian Stallions

Have for sale Bay 4-year-old, weighs 1950 in ordinary condition; took first premium at 1913 State Fair; his dam imported mare Rosebud, weighs 2318 lb.; took first premium and gold medal sweepstakes at 1913 State Fair.; sired by imported stallion Derby. Have at my place 30 colts by this stallion. A proven sure getter of fine foals. Also a sorrel 3-year-old, weighs 2000; will weigh 2300 when mature. His dam imported mare Lizzie de More; took second premium at 1913 State Fair as an individual; first premium as mare and colt, and first for mare and two colts under 4 years; sired by Derby. Prices reasonable and will make terms that will allow purchaser to earn good part of purchase price with the stallions. Call at my place and see these fine young stallions and their get.

H. L. WEST, Hamilton, Cal.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.



KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Breeder of

**SHORT-HORN CATTLE
SHROPSHIRE and
MERINO SHEEP**

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

Salvador Stock Farm Shire Horses



When you buy a stallion, buy a good one. An inferior stallion is dear at any price. High-class stallions and mares always for sale.

**HENRY WHEATLEY,
NAPA, CAL.**

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

A. W. MORRIS & SONS CORP.

Holstein-Friesian Cattle

Woodland, Cal.

America's Leading Horse Importers

PERCHERONS



Our recent importation arrived at our Oakland Stables December 13th. At the International Live Stock Exposition, Chicago, December, 1913, our stallions won two Gold Medals; two Championship Ribbons; two Second Prize Ribbons. There were over 600 Percherons at this great show.

If you want the best, let us hear from you.

**McLAUGHLIN PERCHERON
COMPANY**

Kansas City, Mo.

Oakland, Cal.

HOPLAND STOCK FARM

Breeders of Registered Short-horn Bulls ready for service, fit for range or otherwise. Shropshire Sheep and Berkshire Hogs. Hungarian Ponies, Saddle or Harness. Prices on application. HOPLAND, CAL.

Practical and Sanitary Hog House.

[Written for the PACIFIC RURAL PRESS by JOHN H. DUNLAP, President American Mule Foot Hog Record.]

I am not in favor of a large central hog-house that will hold all the hogs raised, but think that at times it is advantageous to have a number of the brood sows and other hogs in the same building, to save labor. The individual hog-house with a lot or small field for each house has proved very satisfactory on my farms. I had over thirty individual houses and sheds for my hogs, but upon increasing my herd to over 50 brood sows, it seemed advisable to build a small hog-house.

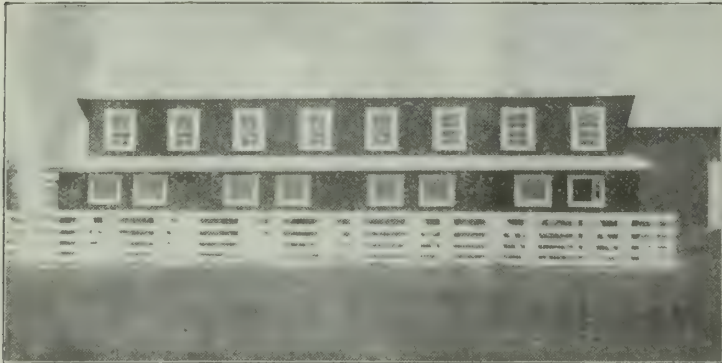
Having examined plans for a number of hog-houses, I decided to build one that I felt would prove satisfactory to me. A house was built 48 by 20 feet, and it was divided into sixteen pens. The inside pens are six by eight feet, and have a slope of one and one-fourth inches to the center alleyway, in order that they may be kept sanitary. The center alleyway, which is four feet wide, slopes toward each end of the building with a fall of three inches

sheeting and building paper, and the sides of the building are made of matched lumber, which cost me \$2.25 per 100 feet. All dimension lumber is of oak. The building is rat-proof, provided the doors are closed at night. In case rats get in during the daytime it is very easy to catch them, by shutting the doors. There is nothing in which they can hide except the bedding.

I had the building spouted to carry away the water, and have tile coming up in front of the house to carry away the surface water. The house was built so that it could be used in all seasons, and we find that it is warm in winter and cool in summer.

While there are many arguments advanced against a large hog-house, I think a small one such as I have described, will help greatly in making it easier to care for a limited number of sows. In case a larger house is desired, my advice would be two or more at different parts of the farm, and not have too many hogs together.

The house I have described cost



Sanitary Hog House Designed by J. H. Dunlap of Ohio.

from the center each way. This slope makes it easier to keep the house clean.

The entire house has a cement floor, and on the inside pens I have laid a plank floor over the cement. While many claim it is not necessary to use plank over cement, I think it is much better for the health of the hogs, and have not had any rheumatism or ill health among the hogs that have been confined in this house.

I might say here that I let my hogs out for exercise into the field in which the building stands, whenever the ground will permit. This is done by opening the gates of the outside pens, thus permitting the animals to graze a little and to exercise. They soon learn their pens, and are very little trouble to get back into their proper places.

The outside pens are six by sixteen feet, and also have a cement floor. There are sixteen of these pens and the cement floors are easy to keep clean and make an ideal feeding floor.

This building stands east and west, with the windows all on the south side. The windows are so placed that on the shortest days in the year, the rays of light which pass through the windows will fall upon the floor of the inside pens. The windows are so arranged that there is possibly a maximum amount of sunlight on the floor of the pens all the winter days. Sunlight destroys disease germs and also gives warmth and dryness to the building.

Ventilation is also made easy by the upper windows, which can be raised or lowered as desired. The roof of the building is of galvanized iron over

approximately \$400, not counting the outside pens and the cement for them. If I build another hoghouse, it will be much like the one I have just described except that I will have larger windows if possible. Since I keep over fifty brood sows to farrow twice a year, I find the building above-described, a very valuable adjunct to the more than thirty individual hog-houses and sheds, which are mostly provided with a separate lot.—Williamsport, Ohio.

FEEDING ONE COW.

To the Editor: We have a Jersey cow weighing about 700 pounds, producing 35 pounds milk, testing 5% butterfat, daily. Am feeding 18 pounds alfalfa, 4 pounds bran, 3 pounds shorts, and 2 pounds of coconut oil cake. Would like to know if these rations are all right. If not, please let me know a good one.—G. P. R., Berkeley.

There is little doubt but that you believe in good feeding and your cow is certainly fortunate in having such a generous owner. The fact that you are getting a pound and three-quarters of butter fat a day shows that the ration you are using gets results, but we think that you are perhaps feeding too high a percentage of proteids, from an economical standpoint.

Dairymen usually find that the best way to figure a ration is through comparing the results that they get from the different feeds used, rather than through and hard and fast rule although oftentimes theory greatly aids the feeder.

W. J. Eacker of Corvallis, Stanislaus

county, is feeding his Jerseys that are on official test a ration of three pounds dried beet pulp, three pounds dairy chops and all of the alfalfa that they will eat and states that he is getting fine results. No doubt you would get as good results, for while there are numerous good rations, those of proven worth are after all the best to use.—J. C. L.

DAIRY CATTLE.

FOR SALE—One pure-bred Holstein bull, Prince Beauty Pieterse Segis H. B. No. 84485, born January 12, 1911, sired by Beauty Pieterse Prince—56435 and of the dam Belle Segis—86647. For detail information, inquire of Mr. A. Sutter, 815 Wells Fargo Nevada Bank Building, San Francisco.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamella Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

WANTED—Sixteen head grade Holsteins. Must be A No. 1. Test for butter-fat and weight of milk required. H. I. & A. F. Bobb, Fallon, Marin County, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Natl. Bank Bldg., Berkeley.

FOR SALE—35 head of registered and grade Jersey dairy cattle. Inquire of H. V. Traynham, College City, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

K. W. ABBOTT offers six registered Holstein heifers for sale. Milpitas, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

BLACK POLLED ANGUS, ten yearling bulls, entitled to registration. I have nothing but thoroughbred stock. C. S. Whitcomb, Exeter, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SWINE.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

FOR SALE—Bay Percheron stud colt, coming 2-year-old out of 2000-lb. horse and 1800-lb. mare; weighs 1600. Price low. Address Box 1819, Pacific Rural Press.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH, property of Mr. and Mrs. E. C. Rand—Fine young Berkshire boars for sale, March farrow. Route 3, Box 69, Santa Rosa, Cal.

BRAE BOURNE RANCH—Berkshire hogs and Tri-color Collies. Young stock for sale. Mr. and Mrs. C. E. Rand, R. No. 3, Box 69, Santa Rosa, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

PERCHERONS

Pure-bred and registered. If you want good ones, I've got them.

E. S. PORTER, Los Molinos, Cal.
One-half mile south of town.

Local Co-operation With Horse Association.

Two of the letters received recently regarding the proposition of organizing a California Draft Horse Breeders' Association open up possibilities of good work by the proposed Association in co-operating with local associations. The first reads:

We have here at Turlock an organization recently formed called the Hawkeye Draft Horse Association. I think there is no doubt that the members will be a unit in desiring the organization of a State Association, and I surely, as an individual owner, am ready to do what I can once the organization is established. What is your plan? What do you consider the first necessary step?—GEORGE SIMON, President Hawkeye Draft Horse Association, Hawkeye Ranch, Turlock.

The second states:

I saw two different letters in your issue of December 20 in regard to a Horse Breeders' Association and think it is a very good plan, as I think it may be a big help to the farmers who are raising horses. There are some very good draft horses here in Scott valley and in other parts of the county, but the market is, or seems to me to be, very poor or dull, no buyers coming in or no one shipping any out of here at the present time. However, later on it may be that some of the city buyers will get up this way, and it may be that some of the farmers hand in organizing a Horse Breeders' Association.—THOMAS FAY, Etna Mills, Siskiyou county.

The program at present is about as follows: In a few days probably it will be decided when the organization could best be accomplished and notice sent out through the papers or otherwise that, on the date decided upon, all persons interested in draft horses could meet in San Francisco to organize. As far as the activities that such association should take up—the constitution, by-laws, officers and such—that rests entirely with those who come to the meeting, or otherwise send in their ideas. All suggestions as to possible and profitable lines of work that can be given will help. It is most probable, of course, that the association would be organized along the lines of other Draft Horse Breeders' Associations of other States.

The above two letters for one thing show local needs and that organizations are, or can be, formed that could co-operate well with the State association in whatever it attempts. We have no knowledge of the number of local horse associations in California, but know that there are scores of stallion companies, owning one or more draft stallions. It is clear that such organizations must be working independently and without reference to other organizations. As organizations they could take membership in the State Association, and being formed of men who are producing and marketing good stock, they could easily be of lots of assistance in whatever is undertaken.

Just what could be done in remedying such a situation as is described in the second letter, we don't know. One sure thing is that there is a great waste of time and money of horse buyers in hunting up good horses for the city market. Some of it is due to going after horses that are not up to standard, much of it to not having

any good way of knowing where to go for horses. What the trouble is in this case, we don't know.

However, an account of the Lamb Growers' Associations in Tennessee we ran across this morning gives, in a way, a suggestion. The members simply made a pool of lambs and wool, grading both and seeing that they were up to standard, selling same to highest bidder or to best market. Local horse associations might arrange to have the buyers come on some certain date, getting their horses together and all fitted as well as possible, which would be a great saving in time, trouble and expense, giving also fairer prices than would probably be secured in private, or rather separate, trades. It would also help to show what was lacking or open for improvement in breeding and care, as proper co-operation in nearly everything usually results in raising standards as well as prices.

The above relates perhaps more to local associations than to a State Association, but if the one was good, the other would be also, and both working in harmony could do more than each working separately.

Some lines of work of the proposed State Association have been indicated in previous issues. It is to be hoped that, when the meeting day comes, as many interested persons as possible will be in attendance and that those who cannot attend will send word of their support and tell what they would like to have done.

LIVE STOCK RATE REDUCTION NEEDED.

Wayne Dinsmore, secretary of the National Society of Record Associations, writes to the PACIFIC RURAL PRESS asking for publicity in adjusting an unfortunate situation that faces the shippers of purebred livestock, whereby they either have to pay excessively high freight rates, or run all risks of injuries in shipment with no more remuneration than would be secured for scrub stock.

Railroads have heretofore settled for animals lost in transit on a basis of actual value, but the Supreme Court last spring handed down a series of decisions, the effect of which precludes livestock shippers in loss of livestock in transit from recovering anything but the value stated in the livestock contract, signed by the shipper at time shipment is made. The present rates on the shipment of livestock, particularly breeding animals shipped in less than carload lots, are not equitable, the value stated in the limited livestock contract is entirely too low, and the rate imposed when a shipper declares actual valuation of animal being shipped, is so exorbitant as to prohibit such declaration of actual value.

For example: A stallion shipped from Chicago to Madrid, Iowa, takes a minimum weight of 3,000 lbs. The rate amounts to \$20 provided the shipper signs the limited livestock contract. The signing of such contract, however, binds the shipper to accept \$100 as the total valuation for the animal in case of injury or death, whether the fault rests with the railroad company or not. If the actual valuation, say \$1000, be declared, the freight rate advances to \$47, which is an exorbitant increase in rate, and is

designed simply to cover the cost of insurance.

The same conditions prevail in the shipment of breeding cattle, the only difference being in degree. In addition to the foregoing, all of the railroads are in the habit of issuing exceptions to the livestock classifications and rates which have the effect of superseding the published tariffs and which impose additional requirements and are a burden to the shipper in time and expense.

The National Society of Record Associations will take the subject up with the Interstate Commerce Commission and ask that the minimum rate required by the railroads for the shipment of animals be made as in the Western Classification all over the United States; that the railroads be requested to cease issuing exceptions to the classifications, requiring attendants to be in charge of livestock in shipments and that no attendant be required on any of the railroads; that the liability under the present contracts be increased in the case of registered animals to \$200 on horses, \$150 on cattle, \$50 on hogs and \$50 on sheep when registration papers are presented; that where shippers voluntarily desire to ship their animals at a higher valuation than specified in the regular contract, that the increase in rate be 5% each 100% instead of 25% increase in rate per each 100% increase in valuation, or fraction thereof.

VETERINARY NOTES.

TREATMENT OF HOG CHOLERA.

To the Editor: I have just lost 35 head of hogs through hog cholera and in trying to stop it I soaked 25 cents worth of copperas, mixed with five pounds of grain, overnight and then fed with other feed to 50 hogs. I have not lost any stock since then, but I find that their eyes have been badly affected and in many cases have gone entirely blind. I would appreciate any advice through your paper as to what I had better do next.—C. G. P., Sacramento.

ANSWER BY DR. CHAS. C. WING.

Wash out the eyes with a saturated solution of boracic acid. Have your hogs vaccinated by a graduate veterinarian. The hogs that are alive are probably immune if they were in contact with the sick ones. Never use Copperas again as it is dangerous.

San Francisco Veterinary College.

ABCESS IN UDDER.

I have a fine Holstein cow, fresh a few weeks ago, and I recently noticed

a hard lump just in front of, and on the border of the udder, from which a thin, foul-smelling fluid is discharged. I have washed it several times with an antiseptic, but it seems no better. She is a heavy milker, having given as high as 66 pounds a day, without grain, since coming fresh, but had no trouble from caked udder, so I am at a loss to know what it is.—E. F. D., Fallon.

ANSWER BY DR. CHAS. C. WING.

Have the cow tested for tuberculosis, as a tubercular abscess is dangerous in that region, as some of the discharge is liable to get into the milk. Advise having a graduate veterinarian make an examination and treat the animal as it may be almost any of following diseases: Actinomyosis, tuberculosis, gangrene of udder, or may be abscess due to an injury.

San Francisco Veterinary College.

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A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

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We offer for sale young mares and stallions from some of the best stock in England. Ages range from 1 to 4 years. These are all good individuals, and every one is absolutely sound. We also have saddle horses and driving stock for sale.

Correspondence and inspection of stock invited.

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Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912. CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe. OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe. INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

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LARGE TYPE

YOUNG STOCK FOR SALE. BOTH SEXES.

THE BROWNING STOCK FARM.

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The Right Mare for Breeding.

The tendency of the California farmer is to pay too little attention to the right kind of horses to breed from and as a result a large majority of our farm colts are not sound.

Many times this is the result of an inferior sire which is the only one within reach of the farmer and consequently necessitates its use but more often the fault could be remedied by better judgment in the selection of the mare.

The right kind of a mare to breed from and the proper time for her to be bred is ably given in the Agricultural Gazette of New South Wales which says that there is a diversity of opinion among farmers as to the age at which a mare should first be bred. Happily, adverse criticism has met the practice of putting an immature two-year-old filly to the sire, for it is unreasonable to expect a young mare of that age, while still growing, to assume the additional task of producing a foal, as both mother and foal must suffer in development. It appeals to any fair mind that the practice is to wait until the animals body and functions are fully matured and her growth complete. The earliest age recognized is from three to four years, but some discretion must be exercised in each case, seeing that certain fillies are precocious and mature quickly, while others are slow.

Neither is it always advisable to breed from old mares, seeing the result is often disappointing. Occasionally it happens that a farmer works a mare continuously until she gives evidence of being worked out. She is then looked on as only fit to turn out and breed from. This class of mare is not altogether satisfactory. It often happens that she fails to secrete enough milk to nourish a foal; at other times the foal is a weakling and hardly worth rearing; and again, difficulties in foaling often present themselves owing to the hardened or atrophied conditions of the muscular mouth of the womb.

Successful breeders invariably select young, vigorous mares for stud purposes.

A mare is always sexually more fit for service and in the best condition for impregnation when she has been given regular work during the previous winter, for when kept in idleness there is a possibility of an infertile service, or (if put in foal) the progeny is not vigorous and sturdy.

The selection of a mare for breeding purposes is to some extent controlled and determined by local conditions, combined with the circumstances of the owner, and in order to ensure good stock it is advisable to be guided by some general principles.

We recognize that grade mares are useful to breed from. Frequently our necessities give us no other option, but, however much the limitation is to be deplored, the best should be made of the situation, and only the cream of those available set apart for breeding purposes. We all readily admit the need for more purebred mares of the right type, soundness and conformation, because from these only can be produced pure-bred stallions, suitable for our requirements. Pure-bred mares pay handsomely for their keep, both in their work on the farm and in the excellence of their foals, and inquiry is therefore as essential to success as discretion in selection. It is not enough to have a mare of good quality and stoutness with a local reputation.

More remote evidence in relation to breeding, type, and pedigree on both sides for at least three generations should be available as a safeguard against the intrusion of some defect or objectionable characteristic in the progeny.

Deficient heart and lung action, weak sight and ill temper in the foal are often traceable to the mare. She should be roomy, staunch, of even temper, gentle disposition, with strong maternal instinct, and a reputation for being good in the collar and quick in moving. Sluggish mares transmit their objectionable habits.

In connection with freedom from heredity disease or unsoundness, it may be especially emphasized that it is of great importance to the owner to have the mare examined by a qualified veterinary surgeon to determine whether either of these defects are present in any form. At the same time appearance often mislead the best judges, for splendid stock have been raised from mares showing no special fitness, though evidently possessed of a capacity for transmitting vigour and quality.

A brief inspection of the future mother should include a keen examination of the way she stands. Correct balance on the ground, standing, walking or trotting with even movement, is essential, for balanced action is the source of a mares ability to do a long day's work and to come home comparatively fresh, showing the minimum waste in power. Any tendency to awkward pace, or abnormal spreading of the feet inwards or outwards, means unusual wear, and early suspension from work. The shoulders contribute in no small way toward the perfection of balance, and enable the animal to walk and trot with level, active carriage, and game, even movement, and they should be fairly oblique and broad.

Symmetry, quality, stamina, stoutness and substance are to be estimated, as well as character and staunchness. The short ribs and hips should not approach each other closely. Roominess is gained by broad and prominent pelvic bones, with width across the loins. The udder, or mammary glands should be firm and well shaped, and should have clearly defined teats. Vigorous heart and lung action is evidenced in the angle and space of the girth and the size of the chest. The ribs should be well sprung, enclosing a capacious barrel.

The legs should be well moulded from the forearm and thighs downwards, terminating in sloping pasterns, and sound round wide feet. The knees should be broad and massive, and hocks well placed, firm and clean.

The lean, fine head, soft but quick intelligent eye, with active ears, are indications of a good disposition.

MORGAN STALLIONS IN STATE.

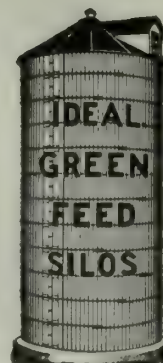
To the Editor: Are there any Morgan stallions in California? If so, where?—CHAS. L. WILBUR, Yuba City.

[The Stallion Registration Board classifies the stallions in California by breeds, but does not mention any Morgans, though of the 1957 stallions and over quite surely there are some. Possibly by writing to the Board at Sacramento you could find the owner of a Morgan stallion, or some of our readers will communicate with you direct.—

EDITOR.]

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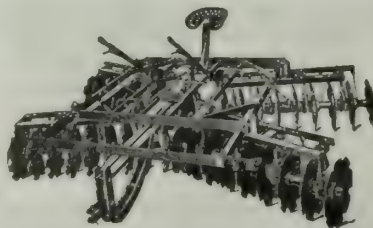
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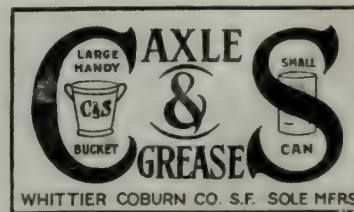
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WHITTIER COBURN CO. S.F. SOLE MFRS.

Pleasing the Stock Buyer.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Stockmen agree that there is a big improvement in the quality of our range grown stock over the kind that was formerly raised and that the betterment is due entirely to the fact that the well bred sire is fast replacing the scrub.

There is no place where one can better see the result of continual breeding up practices than at the stock yards of any of the larger packing houses, for at those places stock is received from almost every section of the West, and by comparing the stock from the different districts it does not take an experienced eye to tell where the better breeding has been practiced.

An example of this was recently seen while visiting the plant of the Western Meat company near San Francisco. The yard man in making his inspection pointed out that certain places had gained reputations for good stock, while others were known for inferior stuff, and stated that the latter named places were only visited by the buyer at such times as the supply of good stock was short.

In passing one corral where a bunch of Nevada steers were being held he remarked: "That kind of stuff is always looked for by the buyer and is the result of persistent and intelligent breeding, for many of our growers do not introduce new blood often enough, and others will use a good bull for a while and then drop back to the scrub again and in this way all of the good that has been done is wiped out in a short time."

Not only are Nevada cattle in demand by the butcher buyer, but the same thing is true of sheep from that section, for while cattlemen have been using good bulls, the sheep men have also been using better bred rams.

To show that there really is the difference in stock claimed, he next pointed out a bunch of Arizona raised stuff. A big difference could be seen in the two lots for while the Nevada steers weighed around 1000 pounds and the cows about 900, the Arizona steers weighed around 900 and the cows 800, and there was apparently no reason why there should be this difference other than the breeding, for they were all about the same age and had been finished in the same way.

When asked about what kind of stuff they usually received from California points, he stated that while some sections produced good stock, the average California stock is between the two extremes, not so good as the Nevada stock and better than that from Arizona, but still leaving plenty of room for improvement before we can hope to obtain the former's high standard.

In Nevada cattle and sheep growing have been the chief industries, due to a lack of development in other lines for a great many years and for that reason men have realized that they must breed up to get the most from their investment, or it might be said that they have specialized on those industries. From their result it would seem that this state needs more specialization along that line if we are to hope for maximum results.

STARTING A CERTIFIED DAIRY.

To the Editor: Will you kindly tell me how to go about starting a certified dairy? Does the Board of Health cer-

tify the milk, or does a person have to hire a chemist to analyze the milk, and does the milk have to be analyzed each milking? What does the State Inspector have to do with it, and what is the extra cost as compared to ordinary milk? Does the milk have to be pasteurized or sterilized?—Dairyman, Los Molinas.

[Certified plants are under the supervision of County Milk Commissioners who are appointed by County Medical Societies. Although every county has a Medical Society, they do not all have Milk Commissioners. If you expect to sell your produce in Tehama county you should get in touch with the Medical Society of that county, who could better advise you about the law there than we can. Certified milk is not pasteurized or sterilized, neither is it analyzed each milking. The Milk Commission's duty is to see that the milk has come from tuberculin tested cows, free from other diseases, and that the milk has been handled in a strictly sanitary manner. The State Inspector does not have anything to do with it other than to see that the state laws are lived up to the same as he would if you were running an ordinary dairy. The cost of production naturally differs but you can safely figure that it will cost about double what it would without certification. By sending to the San Francisco Medical Society you can get a copy of the regulations in force in that city and which are used largely as an example for other counties to go by in drafting regulations.—EDITOR.]

OVERCOMING MUDDY CORRALS.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

During the winter season everyone expects to have more or less trouble with muddy corrals and this is especially true with dairymen who do not pasture any, for in that case the cows are compelled to stand in the corral most of the time and unless some preventative has been taken earlier in the season, it is almost a hopeless job to try to clean up at this time.

Sandy soils are not nearly so bad in this respect as clay soils, but even they often become very muddy if they are not well drained, and for this reason it is always advisable to arrange the corral so that it will have a good drain from the buildings and in order to facilitate things, the corrals should be thoroughly scraped and cleaned before the rains begin.

Even with all these precautions, however, the corrals are sometimes nothing but mud puddles. Some have tried gravel and coarse rock, but it has usually been found that these did little good, as the rock soon gets covered with manure and only makes matters worse.

This trouble has been obviated on a large dairy where from three to four hundred cows are milked on clay soil treated with crude oil. In reality the corrals are the same as a good oiled road, the ground having first been scraped so that it has a slight drain from both sides toward the center and the slope of the entire corral was made toward one end so that all of the surface could be drained to one point, where a tile drain was laid.

Although the cost of this corral was considerable, being about five dollars per head for the number of cows kept, it has proved its worth many times for the work of cleaning the corral is very

light, as when it is raining the water washes the most of it down to the drain and in dry weather it is very easy to scrape the hard surface clean with a scraper or shovel.

Cement is often used for corrals around certified plants, but the expense of this material is more than the average dairyman can afford and for that reason very little has been done with it for corrals, although it is rapidly gaining headway as a building material around dairies.

FALL OR SPRING PIG.

To the Editor: Can you tell me

whether boars from a spring litter would be any better for sires than boars from fall litters, and if so, why?—Dairyman, Denair.

Your query was sent to Chas. Goodman, of Williams, who answers by saying that other things being equal, the date of farrowing would not affect the usefulness of the pig. If he is properly bred and properly developed that is about all that would be required to produce results.

We would as soon have a boar farrowed on the first day of April as on Christmas if the breeding was all O. K. but if the breeding was bad we would not take him at any price.



Dead Squirrels Mean Money To You

No Experiment—KILMOL is thoroughly practical. These large concerns, all large land owners, are using KILMOL in large quantities:—Natomas Consolidated; Santa Fe Ry.; Southern Pacific Ry.; Miller & Lux; Spring Valley Water Co.; Barton Vineyard Co.; Calif. Hawaiian Sugar Refining Co.; Calif. Wine Association; Crocker-Huffman Land & Water Co.; Italian-Swiss Colony; Leland Stanford University; The Masonic Home; Simon Newman Co.; Peoples Water Co.; and many others too numerous to mention.

Government Inspectors are using KILMOL in the SQUIRREL DESTROYER in a great many sections of California, which is the best recommendation possible.

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KILMOL used with the U.S. SQUIRREL DESTROYER, will kill every squirrel on your farm, and thus end their crop destruction.

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The KILMOL method is the quickest method known **One Minute** all the time necessary to treat each burrow being

Every Day in the year, wet or dry, KILMOL can be used. Fire or water makes no difference to KILMOL.

98% Efficient is the proved record of KILMOL. The squirrels can not escape. Failure is impossible.

Free It costs you nothing to learn all about this wonderful method—the best ever discovered for killing squirrels and gophers. Let me prove these statements. Send to-day for particulars.

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MONTEREY, CAL.

Pointers on Walnut Culture.

[The following facts about walnut culture are taken from a paper delivered at the Fruit Growers' Convention in San Jose by Dr. W. W. Fitzgerald of Stockton, a leading grower and authority of central California on this branch of horticulture. Among the points which we have space for, the selection of varieties for localities, for heavy bearing, quality, resistance to blight, frost and sunburn; the advantages in vigor and productivity by using black walnut or hybrid root; new methods of culture; are largely of recent development and responsible in great part for the recent impetus to walnut planting everywhere in California that walnuts will thrive. Certain points taken up by Dr. Fitzgerald which are not given here may perhaps be given later at a time of year when they would prove most interesting and valuable.—EDITOR.]

AVOIDING FROSTS.—Until within the last few years it was not considered possible to grow walnuts commercially in California except in the southern part of the State and within sound of the surf, but trees planted here and there in the central and northern part of the State produced regular crops of good nuts and stimulated growers to plant groves which are now coming into bearing, proving that walnut culture is well adapted to certain places in the north.

Of course, all localities are not well adapted to walnut culture, and the choice of varieties for different localities is very important. As a rule, varieties that come out late in the spring are best adapted for central and northern California, for in the south these late varieties do not do so well, due to the hot, dry weather at the time of blossoming. A variety that comes out late in the spring avoids the late spring frost, but experience shows that even the earlier varieties do well in this section. The walnut is not any more apt to be injured by frost than the peach, apricot or almond. Trees which suffer for moisture are quite likely to be affected at a temperature which otherwise would not affect them.

SUMMER HEAT.—The walnut does not like extreme summer heat, but the late varieties, like the Franquette, Mayette, and Eureka produce fine, white-meated nuts and do not burn as easily as the earlier varieties in the interior of the State. Walnuts will stand considerable heat, but sudden hot spells with a rise in temperature of several degrees for two or three days will cause sunburn.

Trees on good soil with plenty of moisture are not affected by sunburn any more in the central part of the State than they are in the south. Nuts with heavy hulls and those that grow in a thick foliage are better adapted for hot sections. Hot, dry weather at the time of blooming in the spring is very disastrous to the walnut crop in the south, but we do not have it in the northern part of the State at the time of setting of nuts.

APHIS AND THE BLIGHT.—Moist weather in the spring, when the walnut is first coming out predisposes to walnut blight, which is a bacterial disease and requires moisture for its development. In the interior of the State we do not have this moist weather, and as yet practically no walnut blight [or much aphis, either.—

EDITOR.]. Walnuts are grown successfully in the higher altitude. They do well at Angels, Murphys, and any altitude where spring and summer frost are not of regular occurrence, and where you have the varieties suitable for your locality.

IRRIGATION.—The walnut tree, being deep rooted, does not depend upon constant irrigation, but at the same time is a large consumer of water and needs plenty of moisture for its successful development. Where one has to irrigate the interplanted crops, the principal thing is to look out and not have too much water, or at least good drainage. But where there is no interplanting, and after the trees are bearing, many groves receive no irrigation, but an irrigating plant pays big interest on the investment by insuring a water supply during dry years. Any walnut grove will grow much faster, come into bearing earlier, and produce more satisfactory returns if irrigated, especially the first few years. In the interior we have long, dry summers, and one or two irrigations perfects the nuts and insures buds for another season's crop.

The walnut tree is more likely to suffer from lack of moisture during the fall and winter after the crop of one season is off and before that of the next year has started to develop, especially when the fall rains are late in commencing. Although it may not show an active growth, and the tree be practically dormant, lack of moisture at this time dries out the branches and buds and makes it more susceptible to injury by cold. For this reason it is a practice of walnut growers of the south to irrigate heavily during the fall and winter and to lay up a large supply of moisture in the soil for summer. During the summer they irrigate once or twice.

ALFALFA AND WALNUTS.—The walnut is often interplanted with peaches, grapes, berries, and alfalfa. If one is not in too big a hurry for an income, peaches make a very good crop to interplant with, as they come into bearing in three or four years. Berries are a very good crop when one is prepared to give the attention to them. It is a good crop to use when one wishes to rent the land until the trees come into bearing, and it is easy to get gardeners to take care of land for the use of berries.

To my mind, walnuts and alfalfa, on proper soil, is the greatest combination in the horticultural line; while your walnut trees are growing you get good and quick returns from your alfalfa. The roots of the alfalfa loosen up the soil, carrying nitrogen with them to improve its condition. But on light soil, which is best for alfalfa, the walnuts do not do so well, and on heavier ground you have to be careful to have good drainage. One should by all means use the Royal Hybrid root when growing walnuts with alfalfa.

I think on heavy land it is best to plant your trees and let them grow one year before planting your alfalfa, thus avoiding the danger of waterlogging the roots on your recently planted trees in irrigating your alfalfa. A spot should be cultivated on each side of your walnut rows, or a space dug round the trees to prevent the alfalfa from growing close to the tree, which would be a detriment.

Before planting a walnut grove, the

land should be leveled so as to irrigate nicely, and more especially if it is to be interplanted with alfalfa or berries. With alfalfa the checks should be spaced at the distance you wish to plant the trees.

ROOTS TO SELECT.—[Experience has shown so well in nearly all cases that it is far better to plant grafted trees than seedlings, expecting to work over the latter in a few years, that we will not repeat this part of the paper here. The subject is closely related to the choice of roots, and the following, which is extremely important, should

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Plant your orchard with dynamite system. We planted, in the spring of 1913, 28,000 trees with a loss of only 2%. Contracts taken for planting trees in any part of the State; 18 years practical experience. Write to ZUUR & CO., Santa Rosa, Cal.

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FOR SALE.—250 Franquette Walnut trees on Black Walnut root. Price \$1.00 each. Address P.O. Box 21, Acampo, Cal.

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Pear Trees For Sale. 2000 Bartlett's, 4 to 6 feet, 10c each. N. M. Cunningham, Red Bluff, Cal.

interest every prospective walnut grower.—EDITOR.]

For roots to graft on we use the Northern California Black, the Southern California Black, the Eastern or American Black, the Royal hybrid and the Paradox hybrid. The California Black make a good root, but they are variable in their growth, due to the

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fact that many of them are hybrids of the second, third, fourth or more generations. The Southern California Black makes a good root, but they are but my experience with it in the northern part of the State, especially on heavy, moist soil, is that it does not do well, the roots being very susceptible to moisture. The Eastern Black walnut is a good root, but is too slow a grower, taking many years to mature. The Royal hybrid—and when I speak of the Royal hybrid I mean a first-generation cross between the Eastern and California Black, not a cross of a Royal hybrid and a California Black. These nuts are only procured by hand pollenizing, unless perhaps it would be an accidental hybrid, which occurs once in a great while.

I have often heard people say that a hybrid tree was not as good or no better than the straight California Black. This is due to their using a second, third, or more generation nut. The most skeptical are convinced when they see the first-generation hybrids grow in the nursery alongside of the straight or second or third generation trees. These hybrid roots grow at least one-third faster and produce a tree earlier and larger, thus producing nuts earlier and larger crops, due to the increased size and vigor of the tree. The hybrid roots not only grow faster in the nursery, but each year in the orchard you can see how much faster they grow than the straight California Black. The Royal hybrid root is the best all-around root. It does well in heavy soil and stands lots of moisture. The Paradox hybrid root is as vigorous a grower, but having the English walnut strain in it, will not stand as much moisture as the Royal hybrid. It is a better root for light and dry soils.

FRUIT MARKETING AT WINTERS.

(Continued From Page 15.)

basis though it may be, is always to benefit the industry, provided growers are in charge.

The amount of business varies, of course, with the crops. In a normal year it runs about 740 tons of peaches, 160 tons of almonds, 215 tons of figs, 325 tons of prunes, 75 tons of apricots, 25 of pits and 40 of raisins, which was a recent year's work. Besides this, there is the sale of ladders and such things to growers.

LOCAL ADVANTAGES.—By this term is meant the advantages that come to a local organization rather than to one getting fruit from all over the State, for this company gets some good trade on this account. For instance, a grocer likes to have just the same quality of fruit every year and he cannot be sure of so doing if the packer gets fruit from all over California. One time he might get peaches from Chico and at another time from Hanford. One might be as good as another, but there would be an unavoidable difference in the appearance and nature of the fruit as produced and a slight difference from having a different packing house management. If the goods came from one house and district there would quite surely be more uniformity all along the line, and, furthermore, if it were a local organization with only a few brands and a reputation at stake, there would be more effort to turn out a uniform pack. In actual practice this has been a benefit to this company.

A regular trade of wholesale houses

has been built up in the East which gets all fruit regularly, many of them never asking for samples, and this usually means a better price for the company by a shade than could be secured if the fruit was sold to one of the great distributing companies without special interest in the growers. One of the customers, for instance, is a large chain of stores which acts as its own wholesale house.

(To be Continued.)

MILKING MACHINES IN TULARE.

[Written for the PACIFIC RURAL PRESS.]

All classes of dairymen have taken a greater interest in the milking machine during the past year than they ever have before, and especially is this true among those that run their dairies in connection with fruit-growing, for on such places the labor problem becomes complicated during at least a part of the year when the fruit needs attention.

An illustration of this was seen on the ranch of William Swah, in Tulare county, where one of the largest orchards in that county is maintained as well as a good-sized dairy.

The milking machines on this place are nothing new, as they were installed several years ago when they were first introduced in this State, but they were later taken out, as the dairy was leased to Italian dairymen, who, like many of our foreigners, do not believe in the mechanical milkers. Since the lease has expired, however, Mr. Swah has gone back to the machines again, for he claims that they are the most successful cure for labor troubles that he has ever found, and also are a great deal more sanitary than the average hand milker. What is of still greater importance is the saving in expense, for with 120 milch cows, the machines make a big saving, as one man can do the work that was formerly done by two or three, and the only extra expense is that of the electricity which is used for power.

Like most others who have had experience with the machines, Mr. Swah has found that the operator must take as much care of the machine as he would of any other farm machinery, for while the milkers are able to take care of themselves while in operation, the attendant should be one that will use some judgment in handling his cows, the same as he would for hand milking.

As to being harmful to the cows, this man's experience is that there is no more, if as much, danger of ruining the cow than there is by hand milking, and also says that as long as he runs the dairy himself he will depend upon the mechanical way of milking.

It is such experiences as this that are making the machine popular in many districts, for as a machine salesman recently remarked: "One satisfied user makes it far easier for us to make other sales, and as a result you will now find large numbers of users who for years held a strong prejudice against them."

BETTER BRED HOGS PAY.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

There has been a noticeable lack of pure bred hogs on ranches where pure bred dairy cows are kept as well as on many of the grade dairies and it has

always seemed peculiar that a man who knows the benefits of better bred stock should keep the scrub hog when the extra expense of a purebred hog foundation is very small.

Gradually this is being overcome in many parts of the state, an instance recently seen on the ranch of C. Odell in Stanislaus county.

A herd of registered Jerseys has been maintained on this place for some time, but it was only last year that a start was made with purebred hogs, and while the young bulls sell for more money than the young boars, the latter have a good deal the best of it when it comes to rapid growth and have proved a profitable side line to the dairy.

A year ago four Poland China gilts and a boar were purchased as a foundation from A. M. Henry and since that time the herd has rapidly increased in numbers until at the present time there are 16 sows and gilts and three boars. That it pays to purchase good foundation stock may be seen from the fact that the litters have all been of uniform size and many of the individuals are so well thought of that they will be entered at the State Fair next year. The cost of raising the herd has been very small, as their principal ration has been alfalfa and skim milk, also a supply of pie melons that was a volunteer crop. The only thing that has been bought for feed was a small amount of grain which is fed to keep them in good hard condition.

As the herd is worth a great deal more than the same number of scrubs would be and as the cost of raising has been no more, it is not hard to see where the purebred has been profitable.

CHEESE FROM BUTTERMILK.

John C. Phillips, of Imperial, has discovered a way of making cheese out of buttermilk which from printed accounts from that place indicates that if true, this by-product which has formerly been used for hog feed will find a profitable market.

Phillips has been experimenting for many months with the buttermilk cheese, and he believes that the samples placed in the Imperial markets are the practically perfect product. That it is meeting with favor is proven by the orders made for it from the markets. It is declared to be as good as ordinary cheese and is being made for from 5 to 10 cents per pound. If this new product proves of lasting success, it will mean not less than from \$20 to \$30 per day to the creamery by utilizing the buttermilk.

PLANTING KAFIR CORN.

To the Editor: What is the proper time to plant Kafir corn in sediment soil?—E. I. C., Stockton.

[The time of planting depends not on the soil but on the date at which frost has ceased for the season. This is in May in most places.—EDITOR.]

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Write any question that you would like to ask on a plain piece of paper and mail it.

Or, if you want general information, special blanks will be sent to you so that you can fill them out and cover your situation thoroughly.

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The Evolution of the Poultryman.

[Written for the Pacific Rural Press by Mrs. SUSAN SWAYSGOOD.]

Not so very long ago the poultryman was an unknown product, as nearly all poultry used was hatched and raised by the farmers' wife, daughter, mother, etc. In fact, women both on the farm and in little rural corners, wherever they could get a small plot of ground, raised the chickens and eggs for home consumption, and to sell to those who could afford to buy such things. For it does not matter how we boast of the "good old times," there were times when people could not afford to buy chicken, because other meat was so much cheaper. Now things are vice versa and chicken meat is really the cheaper of the two, and a great deal more wholesome.

And for this condition of affairs no one thing or cause is responsible altogether. But we may give credit to the first commercial incubators making it worth while for men to devote their time and attention to poultry raising; otherwise it is doubtful whether men would ever have taken to it. In fact they could not, because a man's nature revolts against doing things on such a small scale that involves so much detail and work.

STARTING WRONG.—While the incubator may be called the greatest factor in the evolution of the poultryman, it is safe to say that it started him on the track of warm close houses, and many other things that he has never gotten away from. Men coming from the cold parts of our own and other countries brought the idea to the Coast with them, and a large portion of the poultry houses are even yet built with the idea of making them warm. I am a firm believer in keeping hens' feet dry, that is, that they should not be allowed to wade through mud and wet in winter, outside of that their feathers are good protection. But keeping them in mud is no more desirable than shutting them up in close ill-ventilated houses. Plenty of fresh air is a real necessity to all kinds of fowls, and the modern poultryman carries that idea into his building. If he builds a modern house for his family he does not fail to provide for at least one bath, maybe more, according to the size of his family, and in building poultry houses and yards he should do the same. Chickens like to wash themselves in a nice cool bath of moist earth. In the bath the hen not only helps to keep herself free from lice, but she exercises every limb and every part of her organism. Watch any good healthy hen at her bath and notice how many times she twists and turns her body around, first to one side and then to the other and when she gets up and shakes herself free of the dust she generally settles down to a fresh position in the same old bath tub of mother earth.

Now if the poultry house has a board floor or any kind of floor besides earth, there is a lack in that house which the poultryman offsets by putting a box of fine earth in the house, but only one hen, or at most two, can bathe in one box and generally when one hen bathes the rest want to, and if hindered they gradually get into lazy habits and neglect this most necessary function.

FOWL REQUIREMENTS.—Since the Philo coop was brought out and the idea of giving fowls a two-story house to perform their duties in, there has been much improvement in the man-

agement of small flocks, but even yet a great many chicken houses and coops bear the mark of the tallow candle era, showing that the average man is away off in his conception of the needs of a flock of poultry. And until the needs of the hens are met and supplied with the proper food, proper housing and care, it is useless to fuss and bother over results, just take what the hens give you and keep still.

To live, man needs light, air, food, clothing, shelter, water and companionship. These things he must have, for if anyone of these essentials be denied him for a long period he either goes insane or dies. Animals need all these essentials in a moderate way, except the clothing, which nature provides. In poultry the shelter should be regulated according to climate and breed, but all irrespective of breed or climate need air and light. Sunshine promotes health and reduces the liability to disease, lowers the numbers of parasitic germs, and adds much to the comfort and well being of a flock of poultry. And through the power of the poultry papers and farm journals, the poultry shows and the State poultry departments the real evolution of the poultryman has begun.

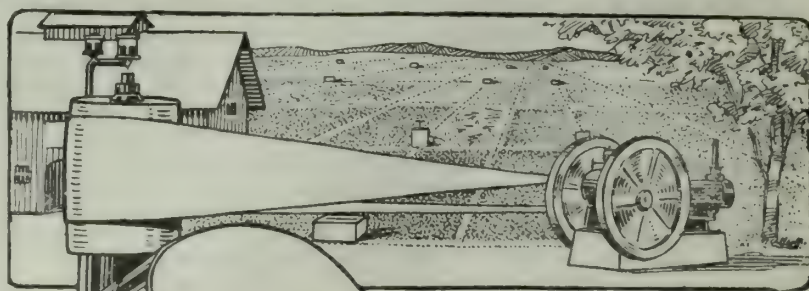
BRAINS AND POULTRY.—Only a few years ago men and women went into the poultry business, investing almost their last dollar, without understanding the first thing about the care of stock or the management of the business. Of course most of them failed and went broke after spending a year in disillusioning themselves of the idea that all they had to do was throw some feed down on the ground and sit on the fence to while the time away. Men no longer think that any old fashion of doing business will succeed with poultry, they find that when the poultry business is conducted right there must be quite as much brains put in it as we would put in other business; in fact to follow the poultry business along all sides it requires a better than an average brain both in physical and mental. And as this idea took hold of men they began to give thought and study to the poultry business as a commercial money making business and now we have specialists.

Sometimes, the "specialist" is nothing but a quack, such as all other professions or trades abound with, but when it is applied to a man who makes a business of, say "hatching" and selling baby chicks by the thousand, then that man earns the name "specialist," just as a man does who is engaged in any one thing exclusively.

The modern poultryman or woman has entirely different methods than were in vogue twenty-five or thirty years ago; they have different ideas of food values, of keeping tab on the profit and loss account, in fact they have systems that are very much advanced, but which need further improvement before they can make the poultry business anything like a sure way of earning a livelihood.

CO-OPERATION.—There must be more co-operation, both in buying and selling, co-operation in exchange of ideas, of failures and successes, before we can progress much further. There is altogether too much selfishness among the fraternity, fanciers are afraid to tell each other anything that will help them because of competition.

BE A TRUE SPORT.—If every fancier would exhibit without that feeling of



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competition and be willing to help the other fellow, he would be a true sport in every sense of the word. But land a' living if some folks fail to win over others and almost efface them from the map, they get mad, or they worry and fret and fume, abuse the judge and everybody concerned, which is all nonsense because there will be poultry shows and winners and losers after we are all passed away. The man or woman who cannot go down to defeat with a smile has no business in a showroom, or in fact in any public affairs; they should go home and grow.

The real live successful poultryman is a product of the times, he has evolved from the school of experience where he learned to be alert to what is expected of him, alive to the prob-

POULTRY

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lems that confront him, charitable to all competitors both in business and showroom, and honest to his customers and himself.

ALFALFA SEED FOR AN ACRE.

Experienced alfalfa planters nearly all agree that the commonly stated amount of 20 pounds of seed per acre is much larger than is necessary or advisable provided a good job of seeding is done. In fact, if an even distribution could be secured of first class seed and a high percentage of germination would develop, two pounds per acre might be the ideal amount to use—if every seed should make a plant. When a drill is used the best practice seems to be to use as little seed as is possible to get a good distribution, and that usually means about five pounds an acre. Thus the saving of seed alone will justify the use of a drill on all but a small acreage.

The Colorado Experiment Station recently tried seeding with different amounts. Conditions and distribution were as good as possible, from 2 to 20 pounds of seed being used on different areas. They state:

The results show that there is very little difference in the amount of hay in terms of tons per acre, from the different rates of seeding, although there was some variation in the results on the different crops, and the records should be continued for several years before the results will conclude what rate has given the best results.

The thin rates of seeding made coarser, more stemmy hay, while the very thick seedings gave very fine leafy hay, almost too fine to get the maximum yield of hay.

The thin stands were more weedy the first season, and also the second, while the thick seedings were almost free from weeds the second year.

From indications it seems as if the plants seeded with eight to ten pounds of seed per acre were the best, all points considered.

The general statement seems safe to say that if conditions are good for germination that ten to twelve pounds of good alfalfa seed should give satisfactory results, and if conditions are not good, twenty or even thirty pounds per acre will not insure a stand.

GERMAN WINE CROP POOR AND SCANT.

A cable dispatch from Berlin states that for the second year in succession the German vineyardists have been hard hit. This year's crop, just harvested, gave nowhere more than half the usual quantity of grapes, and in a majority of districts only one-twentieth of the normal yield. In some sections, notably in Wurtemberg and Baden, there was no crop at all.

Nor does the quality of this year's wine compensate for the bad harvest. On the contrary, it is very poor, except in the so-called Rheingau, embracing such well-known places as Assmanshausen, Johannisberg, Rudesheim, Erbach and Bingen. There, although one-twentieth of a crop was harvested, the wine is of average quality. Vineyardists along the river Saar harvested about a half crop, which is producing wine only slightly below middle quality. But as a general thing the wine is inferior and very acid.

The poor harvest is the result of an unusually unfavorable spring and summer. The latter part of May brought frosts, which did considerable damage.

In July and August, the most important months for the development of grapes, there were frequent cold rains, which not only prevented development of the fruit, but brought various grape diseases. A warm September prevented what would otherwise have been an utter failure of the crop in all districts.

IMMUNITY TO BEE-STINGS.

W. A. H. Gilstrap of Modesto writes to Gleanings:

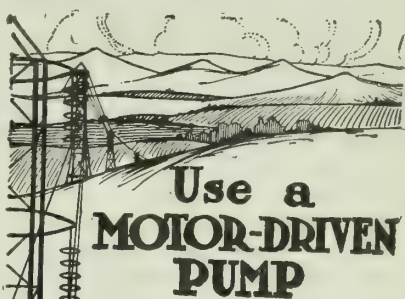
Neither Mrs. Gilstrap's parents nor mine ever worked much with bees. She has worked with them a good share of the time for 20 years, while I have worked with them for 23 years, which means we were both inoculated with the poison of bee-stings quite a while before we were married, which was 17 years ago. Most of our early work was with the ordinary California mongrel bee called hybrids. They can sting. In her early experience Mrs. Gilstrap was stung half a dozen times one day, which caused her to "break out" as if she had hives, and she was quite sick. In two days she was able to be up and tackle bees again.

Now, you might hunt a while before you would find a woman who likes to work with bees as well as Mrs. Gilstrap, or one who can stand stings as well.

In my early experience with bees the stings were so painful and left so much soreness that I seriously contemplated quitting; but the fascinating nature of the business perhaps had more to do in keeping me with bees than financial

considerations did, till I became fairly immune to the poison.

A bee-sting has never been serious with any of our eight children. The most remarkable one of the children in this line is our youngest boy, Percy, who got over a hundred stings above his shirt collar at one time before he was three years old without serious results.



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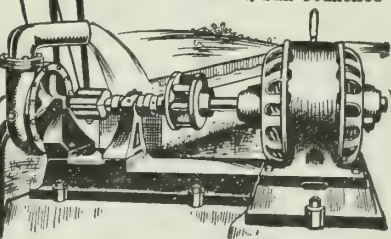
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The Home Circle.

Old Man Dawson's Illumination.

School was over; out trooped the scholars, bent on using limbs and throats to the utmost.

"I like to hear 'em beller," said poor old man Dawson, from his coign of vantage across the square.

It was Hi Loomis who led the "beller" so cheering to old man Dawson, and it was Hi (his active mind finding limited scope in the school-room) who led the pranks without. Folks gossiped finely about that foolish "wider" Loomis, who gave her son his head so freely, and "wouldn't take no advice as to his management, even from the minister." Something pretty bad would come of it; once let a boy like Hi take the bit in his mouth and where would she be? But you might as well groan at a stone wall as to try to darken the cheery smile of Widow Loomis. "I can head him off when I'm a mind to," was her invariable reply. So mother and son went their own way, the son keeping the folks in gossip at least, as he possessed inventive genius equal to his activity, combined with powers of generalship, which held all the boys of Middlebury an admiring crowd at his heels.

Now this sunny afternoon Hi felt inclined for something out of the common run of daily entertainment. Truth to tell, he had had an encounter with the last imported teacher and had not got the best of it. The feeling of respect for his superior, hitherto a foreign element in his school experience, choked him; he'd got to let out or explode! Thus, heading across the square, awake for entertainment, his roving eye caught sight of old man Dawson, who sat, as usual, on the porch of his son's cottage, leaning on the stick he held in both hands, his head raised a little to watch the merry lads as they raced toward him.

"Why, what's the matter, Daddy?" cried Hi, coming to a full stop, as he saw traces of tears on the withered cheeks.

"Want to go to the party," said old man Dawson, putting up a shaking hand to wipe away the tears.

"What party, eh?"

"Over to Jim's. All on 'em be gone. Little Tom, he wanted me to go, but she (his son's wife) said I couldn't."

"Why, that's too bad," chorused the boys.

"I know," piped up a lad. "It's a kind of christenin' over to Middlebury Center, and I guess it was too much trouble to dress up the old man and take him."

"Tom says he'll bring me back a cooky for supper. I ain't eat dinner yet," said old man Dawson, rubbing away another tear. "He says p'raps they'll have ice cream to the party. I ain't had no ice cream, seems to me in fifty years. She says it don't suit me—but it does. It suits me real well."

"I tell you," said Hi, "it's just shameful the way his folks treat that old man. I've just been peekin', and what do you s'pose they've done?—they've locked up the house and just left him a pitcher of milk and some crusts on the back porch."

"She said I might eat when I'm a mind to," said the old man, childishly, proud of such liberty; "but I s'pose I ain't hungry 'nough."

By this time the impatient boys were staring at Hi, drumming their heels into the ash-path, and otherwise

deploying their insubordinate muscles. The limitations of their sympathies were narrow; they were tired of talking to the old man whose accustomed figure seated thus in the porch was one of their earliest recollections. They all knew his story by heart—what a splendid soldier he had been, how he had displayed such bravery during the war—had saved the life of his general, and, as he carried him out of the thick of the fight, had been wounded in the head. He was carried to the hospital and when discharged came back to his native village a mental wreck, with his mind simple and childlike, gentle and biddable, but his day of active usefulness over forever. He was stranded on the tender mercies of his son's wife, who was a hard woman. Irritated by the presence of this helpless member of her family, she said cruel sharp things in his hearing, which, though mercifully slipping away from his treacherous memory, left behind a sting in the feeling that he was unwelcome in his son's home. His grand-children, who loved him as little ones, neglected him as they grew up and observed their mother's attitude toward him. His son Joe was kind enough, but powerless to curb his wife's tongue. He had wished to take his father to the christening party, but Mrs. Joe willed otherwise. Grandpa's eyes, red with unshed tears as the buggy drove away, left an uncomfortable ache in the son's heart, and he ventured to remark an hour later: "I wisht we'd brought the old man, he gets so few outings."

Mrs. Joe's reply and the ensuing war of words made the drive to the Center anything but a holiday jaunt to the parents or the children.

"I say, boys," said Hi, "let's do something for the old man."

"Can't think of nothin' to do," from the chorus. "Can't stand round here chirkin' him up till his folks get back."

Hi was grinning from ear to ear.

"We'll do something better than that," said he. Then he said a few words in a low tone. The immediate result was pantomimic—heads down, heels in the air, to an accompaniment of shrill whistling and cat-calls. Daddy Dawson thought it was done for his entertainment, and chuckled loud and long.

"Go ahead, Hi!"

"Daddy, we're goin' to give you a 'lumination and a percession," said Hi, "soon as it's sundown."

"Be you, boys?" The innocent, trustful tone was infinitely pathetic had the lads only realized what this grand old man had been before the war.

"And you're to come to our house and eat supper," continued Hi. "You know Widow Loomis' lot, don't you?"

The old man smiled radiantly, then bethought him.

"Did your mother say so, Hi?"

"I say so," said Hi, grandly. "I'm off to tell her to get a good supper. I shall be awful hungry myself. Me and the boys has got work to do by supper-time."

"Do you s'pose she'll have beefsteak for supper?" asked the old man. "I ain't had beefsteak for supper, seems to me, in years."

"Beefsteak, hot cakes and coffee, that's what she'll have," pronounced Hi. "When you hear the town clock strike five, you go over—that's you."

The boys went whooping away across lots to the pine woods, and the old man sat smiling to himself, his anxious eyes watching the slow-moving hands of the town clock opposite,

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which had to make their circuit twice before the bell would strike five times.

The townsfolk passing exchanged a few kindly words with the old man, but it had been reserved for the harum-scarum Hi to probe the wound that had given the hero of former days such a sore heart this noon.

"My folks is out; I'm goin' to eat supper with Widow Loomis," was his happy boast.

At last the clock pointed to five; he counted each stroke with bated breath, and then set off across the square—very slowly, for his fine figure was bent, and one leg dragged painfully. He had not far to go, however, before he came to the gay little garden, flaunting with blossom, and he stood there looking over the palings, as though the cottage had been a Paradise. It was so long since he had sat at a festive board or anyone had wanted his company. Suppose Hi's mother should be sharp with him, and tell him to go home? No! old man Dawson, again a child in instinct, knew that Hi had a kind heart and would not bring him to shame.

"Come right in," called a cheery voice from the porch. "I'm real glad to see you. Hi said you was coming. He won't be in till supper-time, but come in and set down in this big chair, and you can visit with me."

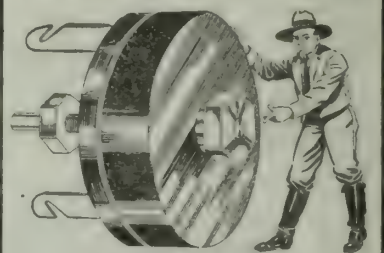
She beat up the cushions to make him more comfortable, and, taking her knitting, sat on the step at his feet, chatting in a friendly way that kept the old man happy and smiling every minute.

The sun sank low in the heavens, and the widow went away to get supper; and the old man, sniffing the fragrance of the coming feast, fell into a series of pleasant dozes.

The return of the boys through the village awakened him. Hi came back triumphant, too full of fun to sober down enough to get that sum done which his new teacher had made a point of for tomorrow.

Supper was indeed a success—beef-

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steak, coffee and hot cakes smoked upon the table. The old man ate heartily, with a child's enjoyment of the good fare, and then, while Hi "wrestled" with his lessons, he sat and babbled to Widow Loomis, and the sun set.

Then there was a whooping and helioloing from every point of the compass,

and all the boys of the town collected at Hi's gate.

"We're going' to give him a 'lumination and a percession," said Hi to his mother. "The boys and me been getting plenty of pine-knots, and we want all the music we can git. Ain't you a tin can or a tray to lend?"

Then, after marshaling his men, Hi ran back to the cottage. "You set there, grandpa," he said, placing the chair in a good position to command the square. "You'll see it all. We're just going to light up. Come along, boys!"

"Want to go, too," said the old man, pitifully.

"But you can't go. You can't march, you know," said Hi, kindly enough.

"Yes, I kin! You play 'Marching Through Georgy,' an' you'll see if I can't march, boys!"

The fire of better days flashed in his eyes, he straightened himself up, and stood all attention, with eager eyes on the boy general.

"Let him go," urged the widow; "it'll make him so happy."

So the procession started, old man Dawson at the head—for a few steps. But the pace rushed him; the procession came to a sudden stop, and Hi was seen helping the old man to drag himself back to the garden gate.

Now, as nothing can ever be kept a secret in the town of Middlebury, by this time the citizens in sympathy with their boys' desire to do honor to the old soldier had turned out into the square.

"Wait a minute, boys! Pete says they'll carry him. Mose is gone for a chair," and before old man Dawson had recovered his breath his swarthy friends hoisted him on their shoulders and carried him off at the head of the procession.

Hi set the finishing touch to this moment of rapture by putting a tin pan in his lap and a drumstick, with a request to beat time. Away they went up the town and over the hilly streets—trumpets, conch shells, tin whistles, pails and trays—one grand hullabaloo, in joyful accompaniment to America, Yankee Doodle and all the patriotic songs the boys could "beller." One by one the citizens fell into ranks and swelled the procession as it passed them by. The women, not to be left out, set lights in the porches and windows. The town was brilliantly illuminated. What thoughts rambled through the old man's brain in this hour of triumph who shall know! Stopping, he asked his bearers:

"Boys, did I kick the goal?"

And the kindly Pete answered back understandingly:

"Yes, massa! You done kick the goal."

"Land sakes! What's come to the town?" cried Mrs. Joe, from the buggy on the hilltop.

"A percession and 'lumination" cried little Tom.

"In honor of a hero," answered a voice from a distant fence. "It's growed into a kind of indignation meeting. Guess his folks 'ull have to brace up and do what's right by him after this—or make tracks from Middlebury."

'Twas a bitter pill to Mrs. Joe!—Ada M. Trotter.

What Lincoln Wanted to Know.

"I visited President Lincoln one day," said General Wilson, "with my brother-in-law.

"A few days later I visited the President again with my brother-in-law, Senator Dixon of Connecticut, and a constituent of his, who was six feet ten inches tall. Well, we met, and for the first and perhaps the only time in his life the President was flabbergasted by the sight of a man looking down on him by six inches.

"Finally his face was overspread by that lovely smile of his and he said, 'My friend, will you permit me to ask you a question?'

"'Why, certainly, Mr. President,' the man answered.

"'I want to know,' said Mr. Lincoln, 'If you can tell when your feet get cold.'"

Mother—"Don't you think, Mary, that your are too old to play with the boys?"

Mary—"No, mother; the older I get the better I like them."

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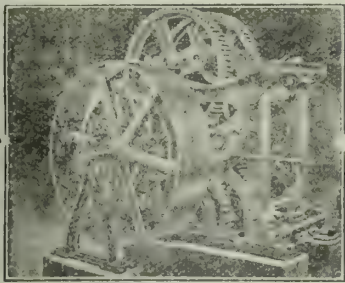
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Painting the Woodwork.

[Written for the PACIFIC RURAL PRESS.]

While there are many new farm homes in this State, there are also large numbers of old ones and while the modern finishes may be used for woodwork on the new house about the only thing that can be done to the woodwork in the old house is to paint the woodwork.

In doing this work more care must be exercised than for almost any other painting job on the house, for the cutting in of edges around the door casings, window cases and window lights, and also of keeping the floor clean, demands a good deal of care and may seem to the inexperienced, almost a hopeless task.

For such work one should supply himself with two good brushes, one small inch and a half sash tool, and another larger one about two and a half inches wide.

The first work to be done after the room has been thoroughly dusted, should be the windows and doors. In doing the window, the sash should be done first and while it may be difficult at first to keep the paint off from the glass after a little practice and by having an old rag handy to clean off the paint, it will soon be found that it is not nearly so difficult as had been supposed. This and the outside edge of the casing should be cut in, with the small brush also the window stop. Unless the window run is in bad condition it is better not to paint it as the extra coating on that wood often causes the window to bind and become hard to raise or lower.

In painting the door, the panels should first be gone over, taking care that there is no surplus left in the corners which will later run down and cause a sag. Following the panels the rails or that part separating the panels should be done later followed by the door edges and the stilts or upright pieces. Next in order comes the door jam and then the edge of the casing and finally the face of the casing.

Th last work in the room is the baseboards and by using the small brush for cutting in the edges and the big brush for filling in, little trouble will be encountered.

As to cleanliness, it is always advisable to have a good sized paper under the bucket so that the droppings will not get onto the floor and by carefully wiping the brush off, on the edge of the bucket, as often as it seems to be overloaded with color there will be very little muss on the floor or on the sidewalk.

Where the room is to be papered or the floor to be painted afterward so much care need not be taken for in that case the spots will not show anyway.

It will not generally pay for one to try to mix his own paint as the desired shade can usually be purchased, at the hardware or paint store, for less money than it would cost to buy the lead and oil for home mixing.

When ordering paint for such work it should be specified that it is to be used for inside work as there is considerable difference between inside and outside paint.

While the average housewife may not like to have her house torn up in bad weather the rainy season is a good time for such work on the farm as the men usually have more time then than at other times of the year.

"Life is short."

"Well, it has nothing on me."

Eliminate Housework Drudgery by Machinery.

The fact that so much more has been done to ameliorate the labor conditions of man than those of woman, is cleverly shown by a story in the Oregon Countryman entitled "Eliminate the Drudgery of Housework." "Should our great grandmothers return they would be perfectly familiar with women's methods of doing housework. They could wash and iron by hand just as they used to wash and iron. But if our great grandfathers should return with them they would be completely lost among the thousands of mechanical devices now used to save man's time and energy. Men have filled their own world with machinery. They realize that nothing is too great or too small to be done with machinery, from removing mountains with electricity to cleaning a straw hat.

"In this day of electricity it should be considered a misdemeanor to wash and iron by hand, because washing and ironing machines are made cheaply enough for the housewife to own them. Washing by hand is so hard that no woman should be allowed to do it whether she be housewife or servant. Always it is drudgery. In the winter it invites pneumonia.

"If the following directions are observed, boiling clothes is not necessary when washed with the machine: Slice five bars of naphtha soap into a two-gallon jar. Cover with water and let stand one day. Then use an egg beater to cut the undissolved slices to pieces. Let them stand for another day, when the soap solution will have become a jelly.

"By using soap thus prepared it is necessary to put the clothes into the cylinder but once before rinsing which saves time and diminishes the gas, water or electricity bill."

To convert a man for the next life is a comparatively easy thing. The real difficulty is in converting him to this life. To accept a proffered salvation that insures heaven is a simple matter, but to work out a way of getting free from earthliness is much more serious. A man can change his attitude, but can he as immediately change his disposition? Does his religion make a mean man generous, a cross-grained man gentle, an arrogant man decent, and a self-centred man bearable? These qualities will turn the edge of conversion oftener than conversion will turn their edge. A long course of hardships, pain, defeats, and punishments is requisite, and even they may fail. A longer life than this is implied by indissoluble faults as well as by indestructible virtues.—Christian Register.

During a certain battle the colonel of an Irish regiment noticed that one of his men was extremely devoted to him and followed him everywhere. At length he remarked: "Well, my man, you have stuck by me well today."

"Yis, sorr," replied Pat. "Shure, me mither said to me, said she, 'Just stick to the colonel, Patrick, me bhoy, and you'll be all right. Them colonels never gets hurted.'"

Housekeeper—What makes you so late with the milk these mornings?

Milkman—Well, you see, mum, the pure food law don't allow us more than twenty-five million bacteria to the gallon, and you wouldn't believe how long it takes to count the little devils."



Ghirardelli's
Ground
Chocolate

Use it for many purposes.

As a flavoring for puddings, ice cream, candy, cake, icing and sauces, Ghirardelli's Ground Chocolate is unequalled for its delicate and pleasing flavor. And as a health beverage it is in a class by itself. So simple to prepare, so economical—so many practical ways to serve and use this beverage food product.

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A sample can mailed free for the asking, will convince you of its quality.

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During January and February all purchases, from any of our catalogs, will be delivered free. This offer applies equally to staple articles, such as beddings, stoves and hardware, as well as wearing apparel. It will be economy for you to take advantage of this offer. Send for our free Special Sale Circular Number 10.

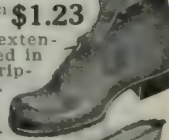
CHILD'S SHOE

58c KRP101. Nature shape button shoe for children. Made of soft selection of vic kid. Plain toe last. A nature shape shoe designed especially for infants ready for walking. Sewed flexible soles. 2 to 5.5c



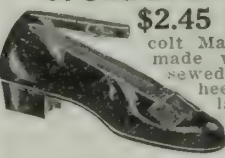
BOY'S BLUCHER

VRP102. Boys' satin calf lace blucher \$1.23 style. Good weight extension soles. Reinforced in the back to prevent ripping; solid toe caps. Medium broad toe last. 9 to 5 1/2...\$1.23



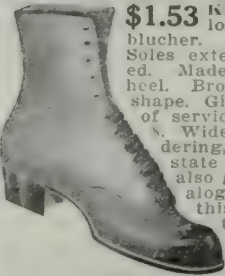
WOMAN'S PUMPS

\$2.45 KRP20. Women's patent colt Mary Jane pumps, made with flexible sewed soles; low flat heels; broad toe last. A popular style at a popular price. 2 1/2 to 6...\$2.45



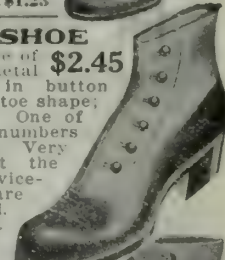
WOMAN'S BLUCHER

\$1.53 KRP184. Women's low heel kid lace blucher. Patent tips. Soles extension and sewed. Made with low flat heel. Broad rounding toe shape. Gives a great deal of service. Sizes 2 1/2 to 8. Wide widths. In ordering, be sure to state size desired; also give correct catalog number, in this way avoiding troublesome delays. Delivered free. Price per pair\$1.53



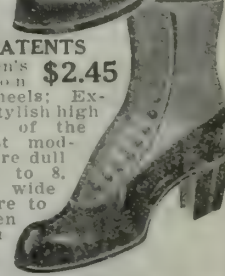
MEN'S SHOE

VRP105. Made of durable gunmetal calf. Comes in button style. In high toe shape; military heels. One of the smartest numbers in our Catalog. Very dressy and at the same time serviceable. Soles are extension sewed. Sizes 5 to 10. Medium and wide\$2.15



WOMEN'S PATENTS

KRP106. Women's patent button shoes. Cuban heels; Extension soles. Stylish high toe last. One of the season's newest models. The tops are dull kid. Sizes 2 1/2 to 8. Medium and wide widths. Be sure to state size when sending your order. Pair.....\$2.45



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FREE
DELIVERY
FOR
FEBRUARY

Our Young Folks

The Ants' Fire-Escape.

It was not quite bedtime, for they had tea early at the Island, so that after the fire was lighted in the big chimney the children might have a little hour with the grown-ups for a game or a story, or for whatever pleasant thing might happen.

Pape began to poke the fire to make it burn more brightly. "Somebody forgot to fill the wood-box today," he said. "Who wants to run out to the wood-pile and bring in a nice birch log?"

"I do!" cried Kenneth, jumping up eagerly.

"Oh, I do!" cried Rose, jumping up too.

"Well, run along, then," said papa, "and get a big one between you!"

Out they ran to the wood-pile, which was just behind the house. And they poked around until they found a great, big old log, one of the very largest in the whole pile; for they wanted to show their father how strong they were. They tugged and grunted and pulled, and finally, after much laughing and squealing, they got it up on the piazza with a bang! Out came their father and mother to see what all the noise meant.

"Well, this is a fine, dry log, and will make a grand blaze for our fire," said pape, picking it up and carrying it into the house. He threw it on the fire, which spouted up with a burst of sparks like a fiery fountain, and the bark began to crackle deliciously.

Little tongues of flame began to lick the old log greedily. Suddenly Rose cried out, "Oh!" so suddenly that even Kenneth jumped. She was pointing into the fire and her forehead was all puckered with distress.

"What is it, Rose?" asked her mother.

"Oh, oh!" cried Rose again. "Oh, the poor little ants! Do look."

Sure enough! The old log must have been an ants' house. The poor little things were creeping out of their holes in it, scurrying wildly about in every direction, seeking a way of escape from their dwelling, which was growing hotter and hotter every minute.

The foremost of them tried to climb down the andirons. But these were too hot, and they soon went hurrying back again. Up and down they wandered, crazily, as if they did not know where to turn. Some of them tried to jump down.

"Oh, what shall we do?" cried Rose.

"Kenneth, can't we do something?"

"Ding dong! Call out the fire-engine!" roared Kenneth, jumping up and galloping away to the kitchen for a pail of water. Kenneth was always ready for a new game.

"Water will do no good. You cannot put out the fire now," called his father. "It is blazing too brightly. I am afraid the poor ants are doomed, Rosie." The poor little creatures crowded together like people in the upper story windows, hoping for a ladder.

"That is what they need, a fire-escape!" cried Rose. "Oh, I must make a fire-escape quickly."

She ran to the wood box and seized a long, flat piece of wood. This she took for her fire escape, resting one end on the rug in front of the hearth, and the other on top of the log, which had now caught fire and was blazing briskly. It made a little bridge between the flame and the burning wood and over the hot hearthstone. Almost

immediately an ant discovered the fire-escape and started across it eagerly. Others soon followed him, then more and more, until a constant procession was seen filing down the little bridge toward safety.

"Hurrah!" cried Rose, as the first ant reached the hearth rug. Then she stopped her shout in surprise. He was going back again—back to the burning log!

"Hurrah for the hook and ladder company!" cried Kenneth, who had returned with the useless pail of water and stood watching.

"Look at them! Look!" cried Rose, and papa and mamma and Kenneth exclaimed, too. The ants were all going back into the fire.

One after another they returned to the log, stopping to make signs to all the ants they met coming down. And they must have told them something which made them all change their minds, for every single one turned about as soon as he was told.

Presently it was plain what they meant. The ants were coming in crowds, now, each one carrying something white in its mouth.

"The ant babies! They are trying to save the babies!" cried mamma. "The brave little things! Of course that is what they care most about." Mamma had a baby of her own upstairs, and she knew just how they felt.

Eagerly the children watched the crowds running down the fire-escape with their precious burdens. Faster and faster they came, and the hearth rug was black with them when papa took it up gently and carried it out to shake it over the piazza railing. How glad the poor little ants must have been to feel the soft, cool grass under their feet!

They were all saved at last, and it was high time, for the log was now one mass of flames.

"What a lovely blaze our log makes!" cried Kenneth, proudly.

"Oh, yes," sighed Rose. "But I am sorry that we are burning up the poor ant's house. It must take a long time for so many families to settle down in a new home, with all those babies, too."

"Well, they ought to be grateful to you for saving their lives," said mamma. "I think you should have a medal such as the firemen earn for bravery in the service."

"Oh, I ought not to have a medal," cried Rose. "I only built the fire-escape. But every one of those kind, generous ants who came back into the fire and saved those babies ought to have one."

"They would like something sweet better," said Kenneth, who knew a great deal about sweet things.

"Sure enough!" cried Rose, clapping her hands. "May I scatter some sugar out there in the grass where papa shook the ants?" she begged.

Her mother said that she might. So I daresay that the rescued ants had a jolly banquet that night to celebrate their wonderful escape. But I suppose the ant babies were too little to share in it.—The Churchman.

Definition of Success.

A prize was won for this definition of success, and it is a good one: "He has achieved success who has lived well, laughed often and loved much, who has gained the respect of intelligent men and the love of little children; who has filled his niche and accomplished his task; who has left the world better than he found it whether



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—If you ask the dealer for a good oil lamp, he will undoubtedly produce a Rayo and tell you there isn't a better lamp made.

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is known in every civilized country of the world for its perfect lighting qualities—its safety and reliability. No glare; no flicker. Easy to light and care for.

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by an improved poppy, a perfect poem or an improved soul; who has never lacked appreciation of earth's beauty or failed to express it; who has always looked for the best in others and given the best he had: whose life was an inspiration, whose death was a benediction."

The agricultural training that a child now gets in our public schools lays the foundations of an education that to the future farmer is of far more importance than classics or higher mathematics.

Care of the Hair.

The first and best plan to keep the hair in good condition is to attend to the general health of the body. Nourishment for the hair is supplied through the blood streams to the oil glands, which are situated at the roots of the hair; therefore one easily sees that if the blood becomes impure or poor in quality how quickly the hair feels and shows it, first looking very dull and lifeless, next breaking off or falling out. Brushing is essential—it stimulates the growth and removes all dust and dandruff from the scalp. This should be done for ten minutes night and morning. Fresh air and sunshine are of great importance. If time al-

lows, it well repays to let down the hair and to sit in the sun for ten minutes each day. Do not wash the hair too often, once a month if living in town, once in six weeks if in the country. Avoid soda, or soap with soda in it. A lather made of castile toilet soap is simple and good; after rubbing it well into the scalp and washing the hair thoroughly, rinse in several changes of water, gradually working down to cold, for those who can bear it; if not, tepid. Rub well with soft warm towels. The sun is the best hair drier. Hair pads and frames are injurious, also metal hair curlers and hot waving irons. French combing, or combing the hair the wrong way, causes it to break.

"We simply can't go on as we have been going," he declared. "We are spending more than I'm making. You surely must be able to understand that such a state of affairs can't last long."

"Then, dear," she soothingly replied, "why don't you make more?"

A little four-year-old was in an upper berth in a sleeping-car. Waking in the night, he was asked if he knew where he was. "Tourse I do," was the answer. "I'm in the top drawer."

THE MARKETS

San Francisco, Dec. 30, 1913.

Cereals.

WHEAT.

Conditions in the local grain market remain practically the same as last week. Some advance has taken place in the north, but practically nothing is coming in at present, and there is not enough trading here to establish anything new in the way of prices. Holders are firm in their views, and buyers so far refuse to meet the prices asked.

California Club, cti....	\$1.52½ @1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½ @1.55
Northern Bluestem ...	1.70 @1.75
Northern Red	1.55 @1.70

BARLEY.

Values are well maintained, and the inside figure on choice feed is a little higher, but the market is very dull, purchases being confined to current needs. There is little doing in a speculative way.

Brewing and Shipping..	\$1.37½ @1.42½
Choice Feed, per cti...	1.30 @1.32½
Common Feed	1.25 @1.27½

OATS.

There is little movement of feed oats in a jobbing way, but there is no demand beyond immediate requirements. Seed grades receive no attention at the moment. Values are steadily held, holders showing no disposition to shade the present figures.

Red Feed	\$1.65 @1.85
Seed	2.10 @2.30
Gray	Nominal
White	1.45 @1.50
Black Seed	2.50 @3.00

CORN.

A little more firmness is noted in the Eastern market, but the local situation is unchanged, owing to the limited quantity used here and the absence of large offerings. California stock is entirely nominal, with none of marketable quality offering.

California Yellow	Nominal
Eastern Yellow	\$1.85 @1.90
Eastern White	Nominal
Egyptian	1.57½ @1.62½
Kaffir	Nominal

RYE.

There has been no business worth mentioning in this grain for some time, but the limited supplies offering are held steadily at the old prices.

Rye, per cti.....	\$1.45 @1.50
Seed	1.65 @1.70

BEANS.

The bean market presents nothing worthy of special comment this week. Trading, which has been limited for about a month past, is now duller than ever, and prices remain firm, with no change whatever since last week. Prospects for a renewal of demand are rather uncertain, but it is believed that there will be a fair movement of most lines during the spring, and some descriptions are already scarce. Limas for Eastern shipment are held a little higher, and stocks in the State are said to be much lighter than a year ago, indications being for a gradually advancing market.

(On wharf.)

Bayos, per cti.....	\$4.90 @5.00
Blackeyes	4.25 @4.35
Cranberry Beans	4.00 @4.25
Horse Beans	1.90 @2.15
Small Whites	4.75 @5.00
Large Whites	3.30 @3.40
Limas	5.00 @5.10
Pea	Nominal
Pink	3.00 @3.25
Red Kidneys	4.50 @5.00
Mexican Red	3.75 @4.00

SEEDS.

The seed market is extremely dull and featureless at the moment, as the demand has been almost entirely stopped during the holidays. A fair movement is expected, however, within the next month or so. Values are unchanged.

Alfalfa	12½ @15 c
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3¾ c
Canary	7 @ 7½ c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾ c

Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Cal. Family Extras ...	\$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Shipments to this market for the past week have dropped off again, but general market conditions remain about as before. There has been hardly any demand from the local trade, and even very limited offerings are sold with difficulty. Most sales, in fact, are said to be at some concession from the quoted figures. This condition is, of course, due mainly to the holiday season and the fact that most buyers, even though their old stocks are exhausted, are unwilling to make large purchases until after the close of the year. Next month a marked improvement in demand is expected. The outlook for prices is uncertain, however, and may deter buyers for a time. Dealers seem to have little confidence in an advance, and some look for lower prices, believing that shipments in excess of the demand will be rushed in from the country.

No. 1 Wheat, or Wheat and Oats	\$15.00 @16.00
do No. 2	13.00 @14.00
Lower grades	12.00 @13.00
Tame Oats	12.50 @16.00
Wild Oats	11.00 @14.00
Alfalfa	10.00 @14.00
Stock Hay	9.00 @10.00
Straw, per bale.....	65 @ 90c

FEEDSTUFFS.

There is no movement just now except in a small jobbing way, but a little more activity is expected within the next few weeks, and prices on all lines are pretty steadily maintained.

Alfalfa Meal, per ton....	\$18.00 @19.00
Bran, per ton	24.00 @25.00
Oilcake Meal	34.00 @35.00
Cocoanut Cake or Meal...	28.00 @29.00
Cracked Corn	42.00 @43.00
Middlings	33.00 @34.00
Rolled Barley	28.00 @29.00
Rolled Oats	32.00 @33.00
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

Both supply and demand is light in most lines, offerings of most varieties of southern stock being smaller than for some time past. Prices on southern vegetables show several slight variations, and cucumbers and summer squash are considerably lower, while tomatoes are higher, first-class stock being scarce, while a good many unattractive lots are offered at about the old level. Lettuce also is scarce at the moment, and prices have advanced sharply. Supplies of celery have been rather large, and ordinary offerings are easy. Cauliflower is higher. Asparagus is not yet coming in with enough regularity to justify definite quotations.

Cabbage, per cti.....	\$1.25 @ 1.50
Cauliflower, dozen	60 @ 70c
Cucumbers, Southern, box	50c @ 1.00
Green Peppers, lb.....	3 @ 4c
Carrots, per sack.....	50 @ 65c
Green Peas, Southern, lb.	6 @ 12½
String Beans, lb.....	5 @ 12½
Summer Squash, lug box.	1.00 @ 1.50
Tomatoes, Southern, crate	40c @ 1.25
Eggplant, lb.	3 @ 6c
Sprouts, lb.	4 @ 5c
Celery, large, crate.....	1.50 @ 2.00
Rhubarb, box	1.00 @ 1.75
Lettuce, crate	1.50 @ 2.25
Mushrooms, lb.	5 @ 10c
Asparagus, lb.	Nominal

POTATOES, ONIONS, ETC.

The demand is rather light at the moment for everything but first-class potatoes, and the better offerings of both river and Oregon stock, as well as sweets, are a little higher. Onions and garlic are unchanged.

Potatoes:	
New River Whites.....	75c @ \$1.20
Sweet Potatoes, per cti...	\$1.25 @ 1.50
Oregon Burbanks	85c @ 1.50
Onions: Yellow River, cti.	2.20 @ 2.35
Oregon	2.50 @ 2.60
Garlic, per lb.....	7 @ 10c

Dairy Produce.

POULTRY.

Turkeys cleaned up well on the Christmas trading, and values are a little firmer than a week ago. Some dressed stock is now coming in, and finds fairly ready sale at a slight advance. The chicken market has been quite firm, and last week's prices are well maintained, but quite a lot of Eastern stock is coming in now and the demand is fairly well supplied.

Large Broilers	23 @24 c
Small Broilers, per lb....	27 @28 c
Fryers, per lb.....	20 @22 c
Hens, extra, per lb.....	18 @20 c
Hens, large, per lb.....	18 @20 c
Small Hens, per lb.....	16 @17 c
Old Roosters, per lb.....	14 @15 c
Young Roosters, per lb..	18 @20 c
Squabs, per doz.....	\$1.50 @ 2.00
Geese, per pair.....	2.00 @ 3.00
Ducks, doz.	4.50 @ 8.00
Turkeys, live, per lb....	17 @21 c
do dressed	24 @27 c

BUTTER.

Both grades have been a little higher than last week, with a comparatively heavy movement on the Exchange, but somewhat larger offerings have brought the price below the figure last quoted.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extras	32 32½ 32 29½ —
Firsts	29 29½ 29½ 29 —

EGGS.

Eggs continue to fluctuate considerably in prices from day to day, being still higher than a year ago. Quite a sharp advance took place early this week, and there is not much trading on the Exchange, owing to scarcity of supplies. The storage stock is well cleaned up, and fresh stock is coming in slowly. A lot of Chinese eggs have been received at Seattle, and some have appeared in the local market, but have produced very little effect.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extras	46 47 48 53 —
Selected	
Pullets.....	43 43 44 46 —

CHEESE.

Prices on all local grades remain as before, with supply and demand about even. A large shipment has come down from Vancouver, but consists of imported stock. Fancy California Flats, per lb...18½ c New Young Americas, fancy.....17 c Monterey or Jack Cheese....20 @22 c

Deciduous Fruits.

Grapes are no longer appearing in this market, and the Christmas trade has about cleaned up the cranberries. Strawberries also are nominal, with hardly any coming in, and the market is left with nothing offered but apples and pears. The latter are quiet and unchanged, and the only change in apples is a slight advance in Spitzenbergs. The demand has subsided since Christmas, but holders feel confident of a good clean-up during the spring and are holding firm as to prices on all desirable offerings.

Strawberries, chest	Nominal
Apples: Baldwins	\$1.10 @ 1.50
Spitzenbergs	1.25 @ 1.75
Greenings	1.00 @ 1.35
Bellefleur	1.25 @ 1.75
Newtown Pippins	1.25 @ 1.75
Pears: Winter Nelis	1.75 @ 2.25

Dried Fruits.

The usual holiday condition prevails in the dried fruit market, business here being extremely quiet with prices on the old level. Buyers in consuming markets, even if they are in need of supplies, are not likely to buy except in a very small way until the inventory period is over; and local packers take no interest in country offerings at this season. While a good demand in most lines is expected during the spring, there is little to indicate any general renewal of interest within the next few weeks. Prunes remain very firm, but under present conditions there can be nothing new in the way of prices. Apricots are closely cleaned up, the figures being practically nominal as far as growers are concerned, and the demand is naturally curtailed by the prevailing prices; while peaches remain rather

easy. A somewhat easier feeling has apparently developed in raisins, with efforts on the part of Eastern interests to bear the market. Local conditions, however, stand about as before, except for a reduction on old-crop raisins for the export trade. The New York Journal of Commerce says:

"The market for spot California seed-raised raisins is irregular and easy. While some packers decline to consider bids of less than 7½c f.o.b. Coast, others are soliciting business, according to current reports, on the basis of 7¾c delivered here. Some brokers report an active demand on this basis, and all claim that they find no definite offering at the price, and they further maintain that they have been able to sell badly sugared goods at a little under 8c delivered New York. Other brokers assert that they have had many orders from the interior at 7½c for choice seeded and are therefore loth to believe that fancy seeded could really be obtained in any quantity at 7¾c New York. Yet such reports persist. In explanation of such reports it is said in some quarters that the antagonism caused by the attitude of the Associated Company with its arbitrary raising of prices and ruling against private cartons has served to array against it the influence of large buyers in the East, who are now bearing the market without reference to the loss it may cause them if they can succeed in breaking down the influence of the big Coast factor. No effort will be spared, it is said, to counteract the influence of the Associated Company short of an appeal to the Sherman law.

"While there is, as usual at this season of the year, little demand for peaches from the local trade, the market remains firm on small offerings. Apricots, being in limited supply here and on the Coast, are firmly held, with prices showing an upward tendency. California prunes are firm but quiet. No business is being put up to the Coast so far as reported, and spot trade is of a moderate jobbing character, but in view of the small supply left in first hands, especially in the large sizes, the tone of the market is firm on both California and Northwestern fruit."

Evap. Apples, 1913	6½ @ 8 c
Apricots, 1913	10 @13 c
Figs: White	3 @ 4½ c
Black	2½ @ 3½ c
Calimyrna	4½ c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½ c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½ c
Seedless Sultanias	4½ c

Citrus Fruits.

The Eastern auctions continue low on citrus fruits, caused by heavy supply and some poor fruit. However, as the packing houses have mostly been closed during the past two weeks, the market has been practically cleaned up, and better prices are looked for.

On the New York auction last Monday, Dec. 29th, navels averaged from \$3.80 down to \$1.70 per box. The other auction points showed about the same prices on the same day. Lemons are also low, the only sale on Monday in the Eastern auctions was made at Cincinnati, when \$2 and \$2.20 per box was paid.

Shipments from southern California up to Dec. 28th, were 873 cars of oranges as against 2039 cars to the same date last year. From Tulare county shipments were 3743 cars, as against 1811 cars to the same date in 1912. From Butte county 330 cars, as against 591 cars last season.

The demand in San Francisco has dropped off considerably since last week, and there is an easier tendency all around. Prices for navel oranges are held at about the former range, but only a few of the fanciest brands will bring the top figure. Grapefruit and lemons are considerably lower. Oranges (per box):

Navels	\$1.25 @ \$2.50
Tangerines, crate	1.00 @ 1.50
Mandarin	1.25 @-1.50
Grapefruit, seedless	2.00 @ 3.50
Lemons	1.75 @ 4.50
Limes	3.50 @ 4.50

Nuts, Honey, Hops, Etc.**NUTS.**

There is no movement of any consequence locally, and in fact only a very light demand anywhere, as the season of heavy consumption is over and desirable offerings are well cleaned up.

Almonds, new crop:

Nonpareils	19 c
I X L	18 1/2 c
Ne Plus Ultra	17 1/2 c
Drakes	15 3/4 c
Languedoc	15 1/4 c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15 1/2 c
Budded	19 c
No. 2	11 1/2 c

HONEY.

The demand is light in this market, but more supplies will be wanted before long, and as hardly anything is offered from producing districts, values are firmly held on the former basis.

Comb, white	15 @ 16 c
Amber	11 @ 12 c
Dark	9 @ 10 c
Extracted: White	8 @ 9 c
Amber	6 1/2 @ 7 c
Off Grades	5 @ 6 c

BEEWAX.

Prices are quoted a little lower, but are in reality altogether nominal, as there is no demand here just now, and there have been no offerings of any importance for some time.

Light	30 @ 31 c
Dark	25 @ 27 c

HOPS.

There is little to report in the California market, as there is not much old stock left, and what remains is pretty closely held. More contracting for the 1914 crop is expected in the near future. Some large contracts have been made in Oregon around 16c, with some spot business at 20c.

1913 crop	20 @ 22 c
1914 crop	15 @ 17 c

Live Stock.

Beef cattle and calves remain firm at the old quotations, while sheep and lambs are higher, with less desire to sell on the part of growers. Hogs, however, are arriving faster than they are wanted, and last week's figures have been shaded.

Steers: No. 1	7 1/4 @ 7 1/2 c
No. 2	7 @ 7 1/4 c
Cows and Heifers: No. 1	6 1/4 @ 6 1/2 c
No. 2	5 3/4 @ 6 c
Bulls and Stags	2 1/2 @ 5 c
Calves: Light	7 1/2 @ 7 3/4 c
Medium	7 @ 7 1/2 c
Heavy	5 1/2 @ 6 1/2 c
Hogs: Grain-fed, heavy	7 3/4 c
150 to 250 lbs.	8 1/4 c
100 to 150 lbs.	8 c
Prime Wethers	4 1/2 @ 5 c
Ewes	3 3/4 @ 4 1/4 c
Lambs: Suckling	6 @ 6 1/2 c

DRESSED MEATS.

Steers	12 @ 12 1/2 c
Heifers	11 1/2 @ 12 c
Veal, large	11 @ 12 c
Small	13 @ 14 c
Mutton: Wethers	9 @ 10 c
Ewes	8 1/2 @ 9 1/2 c
Suckling Lambs	12 1/2 @ 13 c
Dressed Hogs	13 1/2 @ 14 c

WOOL.

The wool market is still dormant, and buyers are not inclined to pay much attention to offerings in the country until the spring clip is ready. Values are entirely nominal.

Northern mountain	7 @ 8 c
Southern mountain	7 @ 9 c
Defective	4 @ 6 c
Lambs	7 @ 10 c

HORSES.

For the last week attention has been too much occupied with holiday affairs to permit much activity in the horse market. Practically no stock has arrived from the country, and no attempt has been made to hold any large sales. A little more activity is expected during the next month, but prospects for a really strong demand in the city are doubtful.

Heavy drafters, 1700 lbs. and over	\$275 @ 325
Light Drafters, 1500 to 1650	225 @ 250
Chunks, 1350 to 1500	150 @ 200
Wagon Horses, 1250 to 1350	100 @ 150

Delivery Horses, 1050 to 1250	100 @ 125
Desirable Farm Mares	75 @ 100

MULES.

1200 lbs.	\$200 @ 250
1100 lbs.	150 @ 200
1000 lbs.	125 @ 175
900 lbs.	75 @ 125

PUBLISHER'S DEPARTMENT.

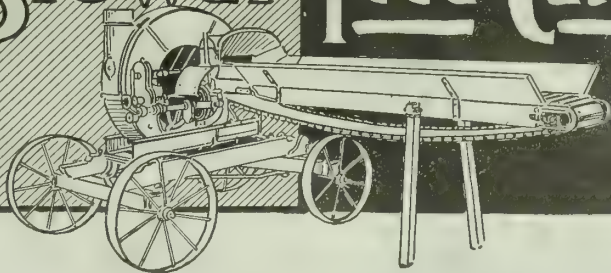
Owing to pressure on our advertising columns, the number of pages of this issue are increased from 24 to 32. We would like to promise that this number of pages would be made permanent, but as our advertising patronage usually falls off after the spring planting season, we suppose the extra number of pages will continue until then only. The policy of the publisher is to give all the traffic will bear, and our hope is to sometime have business enough in the paper to justify a 32-page journal every week during the year. This desired end will be brought about only as advertisers learn of the value of the PACIFIC RURAL PRESS as a medium of publicity. Read this issue carefully; we think you will find it unusually interesting, and, according to the plans of the editorial department, the succeeding issues should be better than this.

Dozens and scores of our readers are sending in their orders for our new book, "One Thousand Questions in California Agriculture Answered." Have you done so? We would urge you to secure a copy to keep as a ready reference in time of need. The book will soon prove to be invaluable to you in your farm operations. The divisions of the book cover all phases of agricultural activity and you positively need a copy.

As is usual at this time of the year we are receiving many handsome calendars for 1914. The handsomest to reach our desk is the one sent out by the John Deere Plow of San Francisco. The Schmidt Lithograph Co., the paper house of Blake, Moffitt & Towne and the bindery of Hicks-Judd Co., all are issuing practical office calendars which will prove valuable in every day use.

Times may be hard but we can't prove it by our subscription department for the last month. During that time the number of new subscriptions received beat previous records, and the number of renewal subscriptions were nearly double any previous month in the history of this paper. Evidently the farmers have the price to pay for their favorite farm paper, and we want to thank every one of them for their help in making the last of the year 1913 a prosperous one to us. We have an ambition to do even better during the year 1914 than the one just past, and with the help of our readers, we expect to issue the greatest agricultural journal in this part of the globe.

Our readers will be interested in the advertisement in this issue of the Mail Order house of Weinstock, Lubin & Co. of Sacramento, Cal. They are giving, during January and February, free delivery on all merchandise purchased from them. Many of the Eastern mail order houses and several in the West, extend the service of free delivery, but only on wearing apparel. Weinstock Lubin & Co. has now established a new precedent in the mail order business. This concern will not only deliver wearing apparel free of transportation charges, but will also deliver free, staples, such as hardware, stoves, tools, etc., at the same prices as before introducing this new feature. This new phase of service means that now the farmer living away from the town will receive the same service as his city brother. This Sacramento concern feels that by the above method they can divert much of the business that now goes to the East and thereby increase their business to such an extent that it will be profitable for them to continue this new service of free delivery of everything. Of course, it is needless to state that we all ought to help such a concern as this, as by helping them, we in the end aid ourselves, by making it possible for them to continue giving free delivery of

Blower Feed Cutter

THE farmer who uses a silo requires a cutter which will cut and deliver the largest quantity and variety of products—and do it the most economically. In the Hocking Valley Blower Feed Cutter is found the simplest and most compact blower cutter ever made. It is built extra strong and of all metal throughout, except the ground sills and feed table. Can be easily operated and will save an immense amount of power. Has few parts to get out of order and each size machine is guaranteed to do the work for which it is recommended.

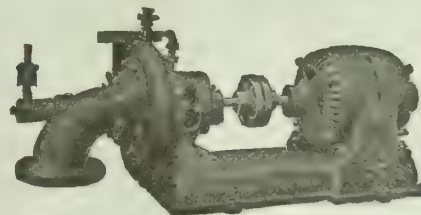
The illustration shows the cutter mounted on a wagon truck, which is a great convenience for farmer and contractor. Regular base can be supplied if desired.

Write for Details and Prices.

Newell Mathews Co.

ESTABLISHED 1886

LOS ANGELES—California—STOCKTON

JACKSON DIRECT CONNECTED CENTRIFUGAL PUMPS

Patented.
Jackson "1912" Direct Connected Pump.

BYRON JACKSON IRON WORKS
LOS ANGELES, 212 N. Los Angeles St.

Built upon the latest and most correct principles, they embody only those features of design and construction which will insure the highest efficiency, as well as the lowest maintenance cost.

We build Jackson Centrifugal Pumps in every capacity for every service for which pumps can be used.

Write for our Catalog No. 47-A.

Dividend Notice

THE GERMAN SAVINGS AND LOAN SOCIETY
(The German Bank)
526 California Street.

Mission Branch, cor. Mission and 21st St.; Richmond District Branch, cor. Clement St. and 7th Ave.; Haight Street Branch, cor. Haight and Belvedere Sts. For the half year ending December 31, 1913, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Friday, January 2, 1914. Dividends not called for are added to the deposit account and earn dividends from January 1, 1914.

GEORGE TOURNY, Manager.

**REDWOOD TANKS**

I sell to the consumer. Box shooks and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

R. F. WILSON, Stockton, California.

everything and still offer their merchandise at prices that compare favorably with other mail order houses.

MR. COATES SUGGESTS DWARF TREES.

To the Editor: Referring to letter in issue of December 27 under "Bismarck Apple and Dwarf Trees," your correspondent says he has never seen a dwarf apple tree in the State. I would remark that I had an orchard of dwarf apple trees in Napa county for many years. They were of several varieties and on the imported Paradise stock. The trees were entirely a success, producing from the third year an abundance of large, fine fruit.

I have often wondered that such orchards were not planted commercially in California; and the same would apply to the pear on quince stock where the land is suitable. It would seem that such trees would be particularly desirable in view of the tendency to do all the pruning with long-handled shears from the ground, rather than in the good old-fashioned way of using a stepladder and small hand shears.

There are a good many things in favor of apples on Paradise, and pears on quince, and I don't know yet what objections there can be to planting them where conditions are right.

At least double the number of trees are required to an acre, but the trees fruit much earlier, and the expense of gathering, pruning and spraying is all

very much less than with tall-growing trees. Any fruit which is blown to the ground is not injured, as it has but a little way to fall—supposing the land to be well cultivated.

The point mentioned also by your correspondent, that Bartlett pears on quince root are generally rosy-cheeked, is also what generally happens, as we find the same in our own orchard.

In England a great part of the finest show fruit is grown on trees of this kind, although it is a very common thing to see dwarf apple and pear trees planted between tall standards. In many cases, however, very large orchards are planted entirely of apples on Paradise or pears on quince.

LEONARD COATES.

Morganhill.

**Makes \$1281⁰⁰
For You The First
Year—And \$750⁰⁰
Every Year After!**

**On
Every
40
Acres**

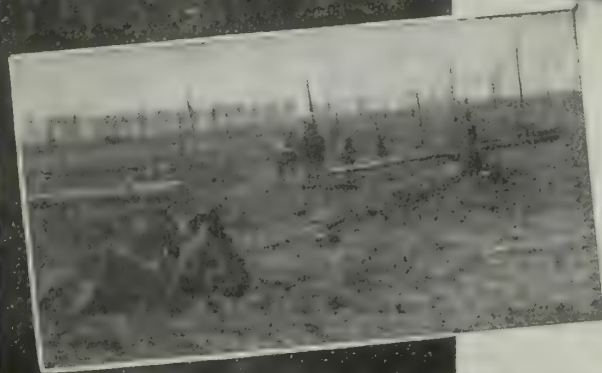
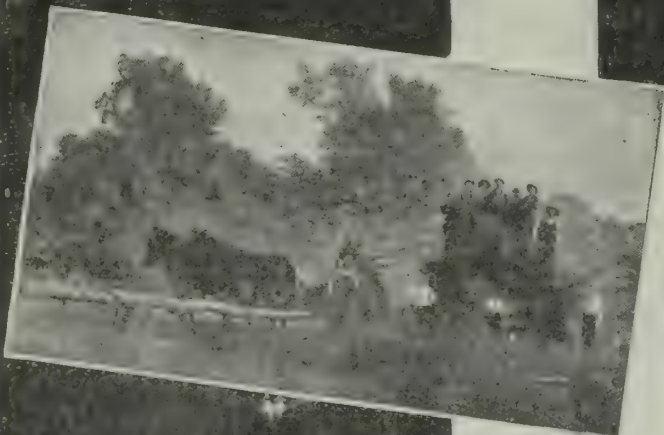
Don't Let Stumps Stand in the Way of Big PROFITS! PULL THEM OUT!

Send me your name. I want to mail you my free book. It tells many facts that will interest you if you have stumps on your land. You will be glad you wrote me.

My book shows how much money stump land robs you of. It tells what the government says about this *loafer* land. It shows how stump land can quickly be turned into *money* land—*money crops*. It *proves* that on 40 acres, you can make \$1,281 the first year—and \$750 every year after the stumps are pulled.

5 Minutes to a Stump—an Acre or More a Day

The book also tells all about the Hercules Stump Puller. It proves to you that the Hercules pulls any size stump in five minutes or less. Makes no difference how big, 4, 5 or 6 feet across the top—with roots 15 to 20 feet down—the Hercules pulls them out *with the roots and all*—really *clearing* the land once and *for all*. It proves that you can pull an acre or more of stumps a day and shows how others have pulled stumps with the Hercules, at a cost of about 4 cents per stump! The



HERCULES

All-Steel Triple Power STUMP PULLER

has conquered every stump it has ever been hitched to. Its triple power feature gives it more pull than a locomotive and my book proves it. You can also use the Hercules as a single or double power puller, for work on green trees, hedges and small stumps. The Hercules is the *only all-steel* stump puller made. It has four times the strength of any "semi-steel" or "new process steel" or cast iron puller made—and is 60 per cent lighter. We know the strength of the Hercules, that is why it is

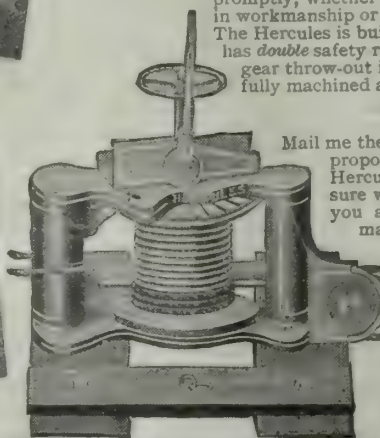
Guaranteed for 3 Years

If any casting of your Hercules All-Steel Triple Power Stump Puller breaks, any time within three years, whether the fault is yours or the machine's, I will absolutely replace any such part free of all cost to you. There are no conditions to this guarantee whatever. Any casting will be replaced promptly, whether the machine breaks by accident or through any flaw in workmanship or material.

The Hercules is built low to the ground, is self-anchored or stump-anchored, has *double safety ratchets*, which insure the safety of operator and team—the gear throw-out is simple and sure—and *every* part of the Hercules is carefully machined and polished to reduce friction and lighten draft.

Get My Book and Low Prices

Mail me the rush coupon or a postal today—*now*. I have a special price proposition that saves you big money on the regular price of the Hercules. I know you will be intensely interested in this simple, sure way to clear your land—and I feel sure my low price will make you a customer. Only a limited number of these introductory machines are left, at this low price—and I want you to get one if I can convince you of your need for it. Let me write to you and mail you my book, price and 30-day free trial offer. Address me personally.



B. A. FULLER, Pres.

Hercules Mfg. Co.

812 22nd St., Centerville, Iowa

Rush Coupon—Mail Now!

MR. B. A. FULLER, Pres. Hercules Manufacturing Co.
812 22nd Street, Centerville, Iowa

Dear Sir: Please send me free book about the Hercules Triple Power All-Steel Stump Puller. Also your low price to first purchasers.

Name

Town

State

Route No.

THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 2.

SAN FRANCISCO, SATURDAY, JANUARY 10, 1914.

Forty-Fourth Year.

POULTRY PROSPECTS FOR 1914

The beginning of the year 1914 may hold out promising prospects for other lines of farming, but certainly at this time there is no line more tempting than that of poultry raising, when we consider the supply and demand that confronts both the market man and the raiser.

In the first place, not only California, but Eastern States as well, are a long ways short of poultry and have been for the past year, a conservative figure being that the East is 33 per cent short and California 50 per cent. This has been caused by several conditions which have asserted themselves all over the country, the main ones being that during the winter and spring months of 1912 and 1913, when most of the hatching should have been done, the prices of eggs was forced down to suicidal quotations and with crop prospects none too favorable, making high priced feed probable, it was only natural that the poultry raiser went into the hatching season with more or less fear of the normal sized hatches.

Happening as it did all over the country, the natural consequence was that eggs must be high at the present time, and, what is still more important, will influence the price until such time as this shortage is overcome.

Unlike other farm products, the production of eggs is not likely to be increased in a short time, for even in a year like the present one, where the hatching season should be starting in a large way, one finds everyone waiting for a decline in egg prices before starting, and so, instead of high egg prices stimulating hatching, they are having the other effect of retarding the hatch to such an extent that it will be impossible to get back to a normal supply this year. What the year of 1915 will bring forth can only be predicted, but one thing is certain, the market in San Francisco will be much broader than ordinarily on account of the Panama-Pacific Exposition, which will bring thousands of extra mouths to be fed, the estimate of one dealer who is well versed on the local poultry market being that there will be one-third more poultry and eggs consumed during that year.

Although poultry raising, like other lines of farming in this State, has been in the hands of specialists to a large degree, it is thought by authorities on the subject that at least 50 per cent of our poultry products come from the farmers who have other interests, such as fruit and live stock, and it seems very likely, in view of past experiences, that the diversified farmer will be an increasing factor in the poultry business, as he can better stand the fluctuations of the business than the specialists, who have no other resources to fall

back upon in poor years.

The one lesson that must be universally learned by the diversified farmer who takes up poultry raising as a side line, is that the man who has brought the business up to its present efficient methods has been compelled to keep a few things constantly in mind, among the more important being better breeding and better feeds connected with better care.

All of these points are as essential for the profitable hen as they are for other kinds of live stock, and the chief requirement for the farmer is to exercise good common sense and plenty of it. There

is nothing that responds more quickly to good breeding, good feed and an average amount of care than the hen, and while she may receive an abundance of feed on the diversified farm, in most cases the breeding and care are sadly neglected.

At the present time the interest being manifested in better-bred poultry is greater than at any previous time, if we use this year's poultry shows as a criterion, which should most certainly be done, for the poultry show is to the poultry industry what the dairy shows are to the dairy industry, inasmuch as one can better tell what the demand is for better-bred stock at such places than elsewhere.

This was borne out at the show held under the auspices of the San Francisco Poultry, Pigeon and Pet Stock Association, last week, for though it was the first show held at this place for many years, it was demonstrated from the attendance and number of entries shown that there is a far larger demand for good stock than even the most sanguine had hoped for.

The number of entries ran between 1500 and 1600, and authorities stated that there was less poor stock shown than at any previous show held for some time.

All of the breeds were well represented, the largest classes being in the following order: White Leghorns, White Rocks, Rhode Island Reds, White Orpingtons, Buff Orpingtons, and Black Orpingtons. That the show offered an opportunity for the utility breeder and buyer was shown by the large number of points which went to the Leghorns, that breed receiving more prizes than any other breed, and in this respect it should be mentioned that some of the largest utility breeders in the State were competing at the show.

Although there were birds from all over the United States exhibited by local breeders, it was shown in most cases that California-bred birds are considered superior in quality, as most of the prizes went to local-bred birds. From this it appears that California need no longer believe that it is necessary to send East for high-bred poultry; in fact, it would be better to patronize home breeders if one



A Pen of Petaluma White Leghorns.



Eastern Interest in the 1915 Poultry Show.

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to

PACIFIC RURAL PRESS CO., - PUBLISHERS

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager
D. J. WHITNEY - - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Jan. 6, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.89	14.87	18.09	68	48
Red Bluff	2.92	15.62	10.79	60	42
Sacramento..	2.78	9.46	7.65	62	46
S. Francisco.	1.99	12.79	9.01	62	48
San Jose.....	1.20	7.94	6.69	70	40
Fresno.....	.27	3.96	3.91	66	46
Independ'ce	.32	4.11	3.87	60	28
San L. Obispo	2.10	11.39	6.80	72	44
Los Angeles..	.04	4.68	5.70	80	50
San Diego.....	.02	3.03	3.46	74	50

The Week.

Well, here we all come down out of the holiday empyrean in a series of bumps against hard life problems, as a lot of looping aviators may bounce upon the all too solid earth. Hardly have the ink and colors dried upon the New Year's computations and pictures of State and national prosperity before Uncle Sam blurs the joyful exhibits with his smudgy rubber stamp: "Look out for the Income Tax." The Internal Revenue Collectors will soon have the blanks and details of what each one of you has to do about it, so we only undertake to picture it in an impressionist way. It seems that if you are a single person you can have an income of \$2500 without telling Uncle Sam about it, and if you are a double person you can have \$3333.33—which would seem to indicate that you are a triple person, but never mind about that. Now if you have taken in more than that during the last year, and some of it came from places where the income tax is already paid, you can take that part of your income out of your total, and you do not have to pay on income which you ought to have had but didn't get (like bad debts), but expenses for medical attendance, store accounts, family supplies, wages of domestic servants, cost of board, room or house rent, shall not be deducted from gross income, and individuals who own their own residences cannot deduct the estimated value of the rent.

The foregoing is for common people, and the farmer has to bunk in with them in a way, but of course Uncle Sam has a special word for his farmers, for whom he is now manifesting such paternal concern through his officers at Washington. This is the message to farmers:

"The farmer is required to include in his net income all money from produce and animals sold, for wool and hides of slaughtered animals, provided they are sold. He may deduct the sums actually paid for the animals sold or

slaughtered during the year, but the value of animals raised shall not be deducted as expenses or loss. The farmer also may deduct money paid as expenses for producing farm products, live stock, etc., and for repairs for the current year. The cost of tools or machinery is deductible, but not to exceed in value those replaced."

Expert Accountant Needed.

It seems clear enough that a farmer needs an expert accountant to make up his income schedule. If he is not as wise in his generation as the children of light (which those managing corporations may be conceded to be) the farmer will get soaked up to his eyes in this income tax flood. It may be taken for granted that the private and corporate producing interests will be able to throw nearly all the figures on their books into the expense, repairs, material-purchasing schedules, etc., etc., and make themselves out to be industrial paupers no doubt. The farmer needs expert accountants to show him how to do this trick. The paragraph quoted above is largely written in terms of the "feeding business." Suppose the farmer has bought a bunch of steers or a band of hogs for feeding, he can take out what he paid for them, but if he feeds them at a loss, which is apt to happen, he cannot deduct that loss from income he received from his other crops. This is a beautiful farming arrangement. The dinged feeders reduced his income, but still he has to pay the tax on an unreduced income from other crops. It is therefore a penalty for enterprise in a feeding effort. The large intent of Uncle Sam's present managers is claimed to be to get more food for the people, how much more food will they get by taxing a farmer on his losses? The scheme is surely a beauty. And then suppose a farmer is not feeding steers, but feeding trees. He surely should have the right to deduct his nursery bill from his years income from other sources. If not, then one kind of farmers is treated more generously than another. And then how encouraging it all is for better farming and larger food crops! A farmer can take out what he pays for new tools but no more in value than those he had before! If he buys a tractor he can take out the value of a riding plow: if he buys a combined harvester he can take out the cost of a reaper, etc! So far as we can see into it, at this moment, it looks like a bungling effort to knock down a progressive man and hold him down. We have no thought that it was intended: it is simply a piece of stupidity.

Making the City too Attractive.

Here is another hard thing which the farmer may have to bump against. There is a chance that city life may be made so attractive for a couple of months that many farm hands who ought to help long with winter work will take up winter residence in the metropolis. Something is being done for the unemployed which is all right in a way and likely to be all wrong in another way. There are several thousands who are out of work and public spirited people are gathering money to give them employment at some public service improvement. The spokesman of the unemployed hold that "society owes them the right to work at the regular rate of wages"—which would be about \$3 per day. Those who are raising the money hold that "the men should be found work and paid just enough to provide three meals a day and lodging, which could be done for one dol-

lar." The committee debated and decided to pay 20 cents per hour for an 8-hour day, which would be \$2 per day. City people are alarmed lest they make city life so attractive that it "will draw all the unemployed on the Pacific Coast to San Francisco." There is another point of view which apparently does not occur to them, and that is that the country is likely to be drained of labor for which it has a certain demand even at this season. Of course the best farm hands will not be likely to be attracted, but a good many who are not the best have to be employed. If the country has to raise its wage rate all around because anything with legs and arms can get \$2 per day in the city, it will work wide hardship. Of course we desire that none be hungry, but to secure that it is not necessary to unsettle the wage rate in the country as this may do. Compensation which will make an idle man comfortable is all that the emergency requires, and such compensation should be, as one speaker said: "not considered as fixing a rate of remuneration under ordinary circumstances, but as an emergency remedy, pure and simple." We doubt very much that "society owes a man the right to work at regular wages," but of course society owes it to itself that no man of good behavior shall suffer. Robbing the country of labor is likely to cause hardship all around.

Meat Prices to Remain High.

It is rather encouraging to find that after all, our food values are still under the control of economic laws and not so subject to government policies as we have been recently told. It does not seem so sure that good meat and bread can be grown on political platforms after all. An institution named the Chamber of Commerce of the United States, which we take it is not a government affair at all, has telegraphed its views to the effect that "the great increase in the population of this country and consequently the increased demand for meat coming at the same time as the decrease in recent years in the number of cattle and sheep, naturally has brought about the present high price of meat." This declaration is based upon the argument that the number of cattle for 100,000 of population is the same now as it was in 1870 and 1900, but that we are gradually approaching a change in the cattle raising industry. An impartial survey of the situation seems to warrant the statement that the price of cattle probably will continue high, but that various agencies will gradually work for a more abundant supply and a more reasonable price. We do not know how accurate the data may be, but the wisdom is so simple as to be almost commonplace. The conclusion seems to be that if people take to growing more stock, as they did after 1870 and 1900, they may get a lot more meat ready by 1920—all of which may be true if meat grown on farms compensates for the meat grown on ranges, which it probably will now that we know how to use alfalfa and other capacious forage plants. The lesson which comes from such a line of study is that which has come from many other points of view, viz.: that there is a chance to build up meat production for years to come without losing money at it. Therefore it is good business to do it. It seems to be more a matter of grass than of politics.

Sunspots and Ocean Wells.

We had resolved to retire from discussion of

celestial weather matters when the sufficiency of rainfall was assured last month, but our brother prophets keep up such a clatter that we cannot sleep on the subject. Father Ricard has found a spot more impressive than that of Lady Macbeth. It is the largest sun spot discovered by him in some time and has an area of 409,936,709,169 square miles. It is 32,013.15 miles long and 12,805.26 miles wide. Some spot that, surely; but Father Ricard assures us that it will make "no special disturbance in California, except warm weather and some big winds over the sea," but "there will be violent earthquakes in places of the greatest seismicity; South America, Japan and the islands of the sea." It is, of course, glad to know that California is so shy on "seismicity" that such a spot cannot shake us.

Another reason why we cannot keep any longer out of the weather is that the University of California has shied its hat into the meteorological ring and seems disposed to fight alongside the Santa Clara University prophet and not against him—at least that is the way we take it. For Dr. William E. Ritter, professor of zoology and director of the biological institution at La Jolla, has shown conclusively that the ocean regulates climate on the Pacific coast, by the constant uprising of cold water from the bottom of the sea to the surface. Three things cause this "upwelling" of ocean waters: The direction and force of the wind; the rotation of the earth; the shape of the California coast line. From these facts the ocean may be used for forecasting weather.

Now Dr. Ritter may be satisfied with this exposition, but all the things he cites seem secondary to us. If we hitch up Father Ricard and Dr. Ritter double we get a good draw. Father Ricard's sunspot stirs up the ocean, and that causes Dr. Ritter's "upwelling," which, in its turn, influences the weather on this coast. It is perfectly clear now. It is seismicity upwelling from the mighty deep! No wonder we get wet.

The Beneficence of Sulphur.

We wonder how Dr. Wiley is getting along and whether he has read the account, which is cabled from Paris, that Frederick Burlingham, an American, who made a descent into the depths of the crater of Vesuvius last week, says that the sulphur fumes, which almost destroyed the party, cured the bronchitis from which he was suffering.

Queries and Replies.

Querists must submit full names and addresses.

Thinning Fruit.

To the Editor: At what stage in the growth of the fruit should the peach and apricot be thinned? I have heard it stated that if the pit has colored any, that it is too late to thin the crop and more damage results than good. Is this correct? Just what is meant by the "natural drop"? Will this occur if the crop has been thinned early in the season? Do Elberts need thinning, or will "the drop" thin them enough?—R. S. E., Kerman.

It does not matter to the tree when you take the fruit off, except that it is likely to make more wood growth or to make the remaining fruits larger when its load is lessened. No damage is done by late thinning. You lose the growth you pull off and it may be too late to affect the remaining fruits much. For this reason it is desirable to thin just as soon as you

are sure the tree will keep too many after it has thrown down what it will by the "natural drop," and that is what those words mean. This will occur more or less even if you have thinned, therefore it is usual to do thinning after it has occurred. This policy applies to the Elberta peach as well as to other fruits. The better they limit and distribute their fruits, the less thinning you have to do. The same fruit will act differently in different places. You have to watch and work intelligently, not by any fixed rule.

When Are Fruit Trees Too Old?

To the Editor: I know of an orchard of about seven acres in French prune trees which are some twenty-three years old, and very large, shading most of the ground where they are planted; also three acres of Bartlett pears of the same age as the prunes. The soil is a very deep, black, creek-bottom sediment. Are prune and pear trees of this age likely to prove profitable much longer?—E. T., San Francisco.

Prune and pear trees twenty-three years old should not be decrepit. In good soil, properly cared for, they should be capable of many more years of satisfactory fruiting. In some of our older plantations, the trees were set too near to each other, and have also suffered for lack of cultivation and fertilization. They can be often reclaimed by better care, by removing alternate trees in certain cases, and by proper pruning of those which are retained.

Grafting Pecans.

To the Editor: I have a lot of pecan trees, about fifteen years old. They are of little value now in regard to fruit. Can they be grafted to walnuts or to anything else that will give satisfaction? The trees in question are fine specimens, strong and healthy.—M. C. M., Concord.

It would be largely experimental. It would be much better to graft in some of the better pecans of which you can get scions from California nurserymen. Some of these large free-bearing pecans ought to be very profitable and perhaps you have a good place for them.

Lion's Teeth in a Lawn.

To the Editor: I have a lawn full of dandelions. What can I do to get rid of it.—G. H., Salida.

Dandelions can be killed by pulling out while the soil is moist in a way to get most of the root. They can also be killed by pouring a tablespoonful of gasoline at the base of each plant. Where one does not have many in the lawn, these treatments are practicable, but if the lawn is very badly infested, there seems nothing to do but dig up, cut out all the dandelion roots and re-sow with clean seeds.

The Standard Prune.

To the Editor: I wish to bud several acres of myrobolan stocks with prunes. Would you advise me to put in Burbank's "Standard"? Do you think it will be a success commercially?—F. L. M., Fairfield.

Mr. Burbank's Standard prune is certainly a great achievement, but time enough has not yet elapsed to determine just what its commercial position will be. Every prune-grower should have it under trial to see what it will do for him, and on such knowledge extended commercial planting should rest. Until such demonstration comes to us from different prune sections, we undertake no conclusions as to its value—for we are no prophet, except of the weather, and we seem to have overdone that job this time. Such a fine fruit as the Stand-

ard is practically sure to be a success, but just what and where must be determined by wider trial. We always welcome observations from growers toward that end.

Profits in Potatoes.

To the Editor: Would it be profitable to plant potatoes on our ranch in the Napa valley, a mile and a half west of St. Helena? The soil is a rich loam and is well supplied with moisture. We would grow them for the market, not for home use. About what should the yield be under those conditions?—Rancher, St. Helena.

We never tell anybody what he can make on anything—not because we do not wish to, but because we cannot. The only thing we guarantee a profit on is a subscription to the PACIFIC RURAL PRESS, and even that will run from a hundred to a thousand per cent profit according to how it is used. A crop, even in a good place for it, may run from a hole in the pocket to an automobile, according to the grower. Your soil and situation are good. The census says that the average California potato crop is 145 bushels to the acre. We know that the average in some districts is as high as 125 sacks to the acre, in a favorable year.

No Flies on the Argentine Ant.

To the Editor: Do you think the Argentine ant has a natural check, such as a parasite or a fungous disease? Almost every pest has a check, and there surely must be something that controls the ant in its native home.—P. B., Berkeley.

So far, we understand, no such thing has been found, and you have no time to wait for it. It is better to get busy with the very effective control methods fully described in a pamphlet which you can get by applying to the Agricultural Experiment Station at Berkeley. Waiting for parasites is like waiting for the devil to get nervous prostration: the way to be saved is to fight.

Almonds Need Drainage.

To the Editor: Is it right to keep the ground soaked on young almond trees during the winter months?—J. H. D., Delano.

If you mean soaked so that water will fill a hole (when you dig it to try), then they should certainly not be soaked. Standing water is apt to kill a young almond tree. If they are on light soil, as they ought to be, this is not likely to occur, because the soil drains itself: but then there is no gain in keeping water running through it all the time unless it comes from rain, and then you cannot keep it away. The almond should stand in soil which is moist, but not wet.

Italian and French Prunes.

To the Editor: Would you advise the planting of Italian prunes here in the hill or in the valley in place of the French prune? What are their relative values in this State?—A Subscriber, Paradise.

There may be places in this State where the Italian is better to plant than the French, but we do not know of them. The Italian prune was planted to some extent forty years ago, but since then it has been banished to Oregon and Washington. In California it does not bear as well as the French, and it does not carry as much sugar and other quality points. The prune tree encounters some troubles on south and west slopes of the Sierra foothills which it escapes in the great valley and the coast regions.

Native Shrubs for California Planting.

[By THEODORE PAYNE, of Los Angeles, concluded from page 8 of last issue.]

One of the most beautiful of our California Native shrubs is the *Carpenteria californica*, forming an attractive bush from five to eight and sometimes ten feet high, freely branching and of fairly rapid growth. The leaves are light green on the upper surface, smooth or sometimes with a few scattered teeth on the margin and grayish white beneath. The flowers are in clusters of five to seven and sometimes as many as twelve blossoms. They are large, pure white with yellow stamens and have the fragrance of the Mock Orange flowers. This shrub has been grown quite successfully in many parts of England especially Devonshire and Cornwall. The largest plant there having attained a height of eight feet and about the same diameter. It has not been grown much in California gardens but is now in great demand, the plants finding a ready sale. The seed germinates very easily, but the seedlings are apt to damp off and require great care when in the young state.

A good companion for the preceding is the Yellow Tree Poppy (*Dendromecon rigidum*). The bush grows from four to eight feet high, has graceful willow-like foliage and bright yellow flowers, two to three inches in diameter, in shape and color almost exactly like the *Hunnemannia fumariifolia* of the gardens. It blooms nearly all the year round, but is at its best in early spring. I found a magnificent specimen growing in a wash in the San Fernando valley. This plant was about eight feet high and had at least five hundred blossoms in flower at one time. This shrub is hard to propagate, but the nurseryman who is successful in growing it can be assured of a ready sale and a high price for his plants.

The *Fremontia californica* (California Slippery Elm), found by General Fremont when crossing the Sierras, and named in his honor, belongs to the *Sterculia* family, grows from four to fifteen feet high and reaches its greatest perfection on the desert side of our mountains. It flowers in early summer and the bushes are simply a mass of golden yellow flowers two to three inches across. No more glorious sight can be imagined than a mass of these shrubs in full bloom. It has been cultivated in Europe and to some extent in California, but is not generally known.

A common shrub in our foothills is the *Fuchsia* flowered Gooseberry (*Ribes speciosum*) and is well worth cultivating in our gardens. It transplants easily and can be propagated by cuttings, grows four to eight feet high and is of spreading habit. The stems are furnished with triple thorns and also thickly clothed with rich red hairs; leaves three lobed, rich green; flowers about an inch long, rich cardinal red, hanging in long sprays much like a *fuchsia*. Though described in some botanical books as an evergreen, it is not truly so or at least not in the southern portion of the State. Unlike other plants however, the leaves turn to beautiful shades of red and brown in the early part of summer and then drop, but soon after the first rain in the fall the plants burst forth with a new covering of rich green foliage.

Three other species of *Ribes* are all desirable. The Yellow Flowering Currant (*Ribes tenuiflorum*) grows in dry sandy washes forming a low spreading shrub with bright green leaves and covered early in spring with a perfect shower of small yellow flowers. The Pink Flowering Currant (*Ribes malvaceum*) found in many of our foothills is of rather erect growth with brown stems, rather heavy attractive foliage and drooping racemes of pale pink flowers. *Ribes glutinosum* is similar to the preceding, but has longer racemes of flowers which are of a bright pink shade.

On many dry ridges in early summer may be found the Woolly Blue-curls or "Romero" as it is called by the Spanish. (*Trichostema lanatum*). It is of shrubby form with small crowded leaves resembling the foliage of the common Rosemary. The buds and flower stems are covered with a thick purple wool, the flowers themselves being of a deep rich shade of blue. This plant is always found in dry places and will not stand a wet situation.

The Manzanita is well known to everyone and is one of the most beautiful of our wild shrubs. It flowers in the early part of winter and the clusters of fragrant, waxen bells, contrast well with the pale foliage and rich brown stems. There are many species, *Arctostaphylos tomentosa*, being the commonest form in Southern California. *A. manzanita*, *A. glauca*, and *A. patula* are some of the most desirable. The Manzanita is hard to propagate, the seed being uncertain, and very slow in germinating. One nurseryman I know of has been quite successful in layering plants, out in the hills and afterwards digging up the rooted layers.

In many canyons, bordering on the Colorado desert, may be found the *Dalea spinosa*, often called the "Smoke Tree" on account of its ashey gray color it is often mistaken at a distance by those who are unacquainted with it, for a column of smoke. It is very variable frequently forming a small shrub four to five feet high, while in other cases it will attain a height of twenty-five feet with a trunk diameter of ten inches. The flowers which appear about May, are pea shaped and produced in great profusion. The color is the richest shade of dark blue I have ever seen in any flower.

Another shrub found in the same locality, is the Desert Willow (*Chilopsis saligna*) a slender growing deciduous shrub or small tree with narrow willow-like foliage. It belongs to the *Bignonia* family and the flowers are white and purple blotched with yellow in the throat.

Garrya elliptica the "Silk Tassel Tree" has been in cultivation for a considerable time. Another species worthy of notice is *Garrya veatchii palmeri* which is frequent in the upper portions of the Chaparral belt of the San Antonio and Cuyamaca mountains.

Two very interesting shrubby flowering plants found in dry sandy soil are *Eriodictyon tomentosum* which has gray, woolly stems and leaves, with violet blue flowers resembling the *Heliotrope*. *Eriodictyon parryi* has handsome foliage and numerous long spikes of rich blue flowers.

On mountain slopes in our Coast range may be found the Chaparral pea (*Pickeringia montana*) where it often forms dense impenetrable thickets. The leaves are small, dark green and the branchlets terminate in long ridged spines. The flowers are large pea shaped and of a magenta pink shade.

The Wild Rose (*Rosa californica*) is no doubt familiar to everyone, and is well worthy of cultivation.

A variety found in the San Bernardino mountains and superior to the common for mis known as *Rosa californica* var. *glabrata*, being more free flowering and of a bright pink shade.

The *Encelia californica* is plentiful in all our foothills producing quantities of yellow blossoms something like the single Sunflower; it blooms abundantly, the flowers are on long stiff stems and lasts well when cut. Another species really superior to our local one is *Encelia farinosa* found on the edge of the desert; it has whitish foliage almost the color of the White Sage, forms a compact bush and produces a perfect wealth of bright yellow flowers on long stems.

A very rare shrub found only in one locality is *Berberis nevini*. It forms an extremely handsome and compact bush with prickly foliage and long sprays of small yellow flowers which appear about February. *Berberis dictyota* is a low growing plant often found in shady places and is valuable for its rich foliage which is very simi-

lar to that of the Oregon grape.

The Mountain Mahogany (*Cercocarpus betulaeifolius*) is a pretty shrub of rather spreading habit with small dark green leaves. The flowers are quite small and inconspicuous, but the long feathery plumes of its fruit are quite pretty. It is particularly valuable for planting in dry places.

A pretty flowering shrub belonging to the *Malva* family and found in dry sandy washes is *Malvastrum fasciculatum* (False Mallow). The flowers are closely set on long wand like branches, are of delicate texture, pale pink and fragrant. The anthers are golden brown and with the pink petals contrast well against the grayish hoary foliage. Another desirable species is *Malvastrum davidsoni* which has larger flowers of a rose purple shade.

The flowering Ash (*Fraxinus dipetala*) is a deciduous shrub growing five to fifteen feet high with light green foliage and white flowers.

The Wild Honeysuckle (*Lonicera subspicata*) is a climbing shrub particularly valuable on account of its great wealth of shiny green foliage.

Holodiscus discolor (Native Spiraea), *Symphoricarpos mollis* (Snowberry), *Lotus glabra* (Broom), *Lepidospartum squamatum* and many others are worthy of cultivation. In conclusion, I would recommend nurserymen, who are raising ornamental stock, to pay special attention to California Native plants.

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Martinez, Cal.

To Renew Old Fruit Trees.

California has not as many old neglected family orchards on farms as may be found in the eastern states, but there are a few here and there which are yielding no good fruit for family use. They can often be restored to good service and the general outline of the method is the same for California as for Virginia where the following is published by G. W. Koiner, Commissioner of Agriculture:

There are at least three main causes for this unprofitable condition. 1. The trees in many cases are old and uncared for and bear less fruit and poorer quality than when younger. 2. The San Jose scale and other orchard pests and diseases are increasing and unless spraying is practiced the trees are killed or materially reduced in vitality and the fruit reduced in quality. 3. The market's demand for fruit of better quality than formerly. Twenty-five years ago the market was supplied largely with the surplus from these family orchards. At the present time well-cared for orchards furnish a large part of the marketable fruit which so far excels in quality than from the uncared for orchard that the latter hardly competes at any price. In most old orchards may be found examples of natural orchard renewal. A gale roughly tears off a few branches and from the stubs are sent out clean new shoots which thrive and bear cleaner, choicer fruit than the old wood until they are choked out. Or a new shoot (waterspout) escapes the vigilance of the would-be pruner and crowds its way up into the light and attempts to uphold the record of tree for past performances. This is nature's method of renewal. By assisting nature with judicious pruning, spraying, cultivation and fertilization, most of these old family orchards can be brought again into profitable condition. The life of many of them may be prolonged for many years. Others can be made a source of revenue until a new orchard can be planted.

The method of orchard renewal depends largely upon the condition of the trees and must necessarily differ in some degree with every tree. Generally speaking it will not be found expedient to spend time and energy on trees whose trunks are defective. Such trees may be saved by carefully removing the defective parts and filling with cement, but this is hardly warranted from a commercial standpoint.

The form of the tree will determine in a large measure the method of procedure. Some trees may not need renewal. They may be of good form and capable of bearing good fruit but are too high to permit either thorough spraying or economical harvesting. (Neither can be done with trees over twenty or thirty feet high.) If higher, they should be headed back. In either case, the top may be full of disease or be old and gnarled and thus be unfit for fruit bearing or it may have been pruned so that the old fruiting wood is borne on the ends of the long, bare branches where it is impossible to reach it. In such cases, the problem is to grow a new top. In trees of this character, watersprouts develop quickly. It is nature's method of prolonging the life of the tree. By cutting back these old branches, often leaving little but stubs, the growth of the new wood is stimulated, or if there are no indications of new growth at the time of pruning it will almost invariably stimulate the pro-

duction of new shoots from adventitious buds. In this method of renewal it is necessary to keep in mind the principles of pruning, especially the fact that a cut should be made close to the body of the tree or another branch when possible in order that it may heal rapidly. In some cases this of course is impossible. In all cases, however, the wound should be given a thorough coating of a thick paint of pure white lead and oil to prevent decay. The initial pruning is only one step in the renewal of an orchard. It must be followed by intelligent annual prunings to thin out all excess growth of new wood and to bring the new top into proper form.

Fertilization is an important factor. Many of our old orchards lack plant food. This is evidenced by lack of vigor and lack of color of foliage. A liberal application of fertilizers should be given to assist in stimulating a vigorous growth of new wood. Stable manure applied about every three or four years at the rate of ten or twelve tons per acre, followed with two or three annual applications of a complete fertilizer containing about thirty pounds of actual nitrogen, sixty to seventy-five pounds of actual phosphoric acid and fifty pounds of actual potash per acre, appears to give the desired results. The addition of an extra amount of nitrogen for the first two or three years after pruning might be of advantage to promote wood growth. When the orchard is cultivated this may be secured by growing nitrogenous cover crops such as bur clover, vetch and so forth.

Old orchards which have been long in sod may be stimulated by cultivation provided it is not so deep as to destroy too large a proportion of roots. In such orchards the roots will be found relatively nearer the surface than in cultivated orchards. Discing in the spring when the ground is easily worked may be sufficient for the first year.

Spraying is an operation now acknowledged to be necessary for the production of marketable fruit. Orchard renewal is ineffective without it. Old and neglected orchards are invariably the breeding grounds of insects and fungus pests and because they have been thoroughly established, spraying must be thorough and efficient.

In addition to the benefit the orchard may receive from intelligent renovation, the young orchards in the vicinity will be benefited because the breeding places of insects and fungi have been destroyed.

SPRAYING FOR STIMULATION.

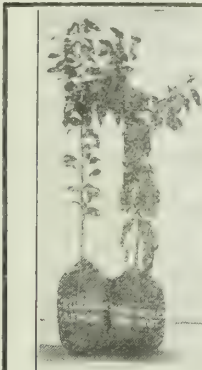
To the Editor: I was very much interested in Mr. Volck's article on Stimulation by Spraying which you published in your number for Dec. 13, and would greatly appreciate additional information on the subject. Could you please refer me to additional literature stating particularly the nature of the evidence for the stimulating effect, and the strength and quantity of nitrate of soda required to produce the maximum stimulation. Has the possibility of the nitrate spray acting by absorption from the roots been excluded?—F. W. B., Concord.

[This whole matter of spraying with nitrate of soda is still in an experimental stage and there is no literature on the subject. More has been given

in the PACIFIC RURAL PRESS of last fall and spring than anywhere else as far as we know. These references you can find by looking over index at close of each volume, if you keep files of the paper. The first experiments were made in 1912 by W. H. Volck, horticultural commissioner of Santa Cruz county, and by Mr. Ballard of the U. S. Department of Agriculture. They sprayed apple trees which previously had refused to bear with a solution of nitrate of soda and they bore large crops of fine apples. Unsprayed trees loafed on the job as usual, although as much nitrate of soda was applied to the roots as was put on the tops of the first lot, the advantages all coming from the spraying without the shadow of a doubt. In 1913 Messrs. Volck and Ballard continued the experiments, we are informed, and the results will be reported from the U. S. Department of Agriculture. We have no definite knowledge as to these results, but believe the advantages of spraying was shown in a number of cases. In some other districts where

spraying was done it was done too late and the year was bad for definite results also. Although the subject is in its infancy and there is no telling when it will work and when it will not, it would seem that this is going to be one of the biggest things recently developed. Several fruit men wrote in last spring about the matter and we hope that some tried it and will tell us of results.

The dose is one pound of nitrate to a gallon of water, or sometimes half a pound to the gallon. It can be applied with ordinary lime-sulphur or other sprayings, or by itself with about 15 to 20 pounds of caustic soda to the 200 gallon tank added to make it stick to branches. At first it was thought that it should be applied when the buds were swelling. Now it seems that it can be applied any time to dormant trees and it would be well worth while for everyone spraying any kind of trees this winter or spring to put some nitrate of soda in the spray tank for part of the orchard as an experiment.—EDITOR.]



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The Ideas of a Fig Grower.

[By the ASSOCIATE EDITOR.]

Figs are one of our less important or minor fruits and although fig planting started with new vigor several years ago, the fruit has yet attained no special popularity. Nevertheless, the market outlook, prices and horticultural habits all justify very bright hopes that some day it will be found one of the very foremost California fruits. Instead of giving these reasons in the abstract they can better be put forth by telling of the experience and ideas of one of the most successful fig growers in the State, Henry Markarian of Fresno, who also was one of the first men in the field.

He started his 160-acre fig orchard about a mile north of Fresno, 10 years ago in the early days of Smyrna fig planting and sustained hard knocks that the new planter would not have. Half was put out to Adriatics, and half to Smyrnas. Calimyrna and Smyrna are only different names for the same variety. Grapes also are grown in a large part of the orchard. The vines, however, are going out as the figs are too good a crop to be reduced by interspace crops. Smyrnas five years old, for example, should produce half a ton to the acre. If they share the soil with other things they probably will be 10 years old before doing as well.

SMYRNAS THE BEST.—A few people think probably Adriatics are better than Smyrna figs. Mr. Markarian says that the Smyrna outclasses everything in sight for orchard planting, though for border planting he would take the Adriatic in preference. He is going to back up that belief by grafting over the Adriatics to Smyrnas, which is good proof of his favor, and he has no reason save experience for preferring one more than the other.

The reasons contradict beliefs commonly accepted as true. Smyrna figs for one thing will give an actual greater tonnage than Adriatics, though Adriatics may outyield the Smyrna in border form or when alone. Thus against two big handicaps the Smyrna trees on this place gave 110 tons of dried fruit against 90 tons of Adriatics. One hindrance to Smyrna production was the vineyard, for a much larger part of the Smyrna orchard was in vines than Adriatic orchard. Another very big factor was that a much poorer stand of Smyrnas was secured than Adriatics. In some places less than

half the space is in bearing trees in the Smyrna orchard and it is hard to say just what the real bearing acreage is. Certainly it is far less than the 80 or 160 acres would indicate, and to call 110 tons the crop of 80 acres is a great understatement.

One reason why Smyrnas will outyield Adriatics is that the figs are larger. In the second place they are heavier. It is amazing to feel the weight of a small box of packed Smyrna figs. No other dried fruit can compare with them. Again the Smyrna tree has lots of room for figs. Look at one and see. Its branches are separate and upright, the Adriatic branches are thick and uneven and the head of the tree flat. Poor Smyrna yields have been due to poor caprification, that is, poor distribution of the fig wasp, and with lots of capri figs and insects as many will set as there is strength to mature.

Again, the Smyrna has a better root system to get food from. The Adriatic roots, like the top are flat, that is, wide, shallow feeders. The Smyrna roots are like Smyrna branches, only headed the other way, that is they go downward and outward, like an inverted goblet. The Mission is like both, shallow and deep rooted, a fine feeder, very tough and hardy, and to be recommended as a stock for the Smyrnas.

The Smyrna root is hardier in most ways than the Adriatic, but brittle and breaks easily in a heavy wind after irrigation, which is another reason why Mission roots can be advised.

PLANTING AND CARE.—Whatever root is used there will be difficulty in getting a full stand, as one will have guessed by the misses in this orchard. The fig is a very uneven grower at the best and some trees will outstrip others, so that the nursery should select cuttings from only the most thrifty trees. Also, the roots are quicker killed by transplanting than any common fruit. If the nursery is careless in heeling them in, some are sure to die, and the grower by slight carelessness is sure to lose a few more. An 85 per cent stand is very satisfactory. Many more misses than this were made in the first plantings here and Mr. Markarian was rather discouraged with the prospects, owing to early lack of knowledge of right methods of using capri figs, an odd not reset the trees until recently.

The right soil is a heavy soil, at least sandy soils are not good, though fine orchards can be grown in sandy soil provided there is a close subsoil about

five feet below. The red soil from the foothills is very satisfactory, or heavy valley soils.

(CAPRI VARIETIES.—Mr. Markarian

If your orchard bears

The new Burbank PRUNE The "Standard"-9 to a pound

you will have a wealth-producer out of all proportion to the cost of and the labor given to it. Luther Burbank says of it, "The best prune ever produced."

Well grown Burbank Standard Prunes measure 4½ inches around one way by nearly 6 inches long the other way. They are fine grained and juicy, yet firmer than most other drying prunes—very sweet and a perfect freestone. The trees are enormous and never failing bearers—good healthy growers.

This is another of the new creations of Luther Burbank described in our 1914 Nursery Catalog. By having this book you will familiarize yourself with the sure, big revenue-producing original Burbank novelties. You will learn about Burbank's Giant Cherry that is more than 3 inches in circumference and more than an inch in diameter; of Burbank's Goldridge Apple, a fruit finer, larger and more succulent than its parent, the Newtown Pippin. You will learn about the Giant Plum, the Stoneless Plum and a Plum which bears profusely when all others fail.

Remember it requires as much time and labor to grow ordinary productions as these sure money-bringers. We are now prepared to furnish anything required in the seed and nursery line in addition to the original Luther Burbank productions—citrus trees, ornamental trees, shrubbery, pot plants, evergreens, and all the standard varieties of fruits.

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Sole Distributer of Luther Burbank Horticultural Productions

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WARNING—To be sure of obtaining original Luther Burbank productions, look for the seal on all purchases you make. None genuine without it. This is a protection to you and one to which you should give heed.



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Strong, thrifty one-year-old stock, eight inches and up.

Also fine line pedigreed stock of Eureka Lemon, Navels, Valencias, Marsh Seedless Grape Fruit and Mission Olives.

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(Established 1895)

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In SHADE TREES we have a fine stock of BALM OF GILEAD, UMBRELLA, MAPLE, SYCAMORE, ACACIA, PEPPER, EUCALYPTUS, GREVILLEA, ETC., ETC.

Four Hundred Thousand ROSTRATA TERETECORNIS RUDIS and GLOBULUS in Flats twelve to twenty inches.

Send us a list of what you will need for estimate. Catalog Free.

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Main Office 2525 Tulare Street

—FRESNO, CAL.

was one of the leading investigators in capri figs and methods. These are the wild figs needed in the Smyrna trees to make the fruit set. He has about 20 varieties growing and discovered several leading kinds. A very important point is to use lots of these. Early investigators used far too few, which was a leading reason for failure and the biggest reason that Mr. Markarian was discouraged from resetting misses in his Smyrna orchard. He has found that the best results can only be secured by having five acres of capri figs to every 100 of Smyrnas, three or four times as many as some people recommend. That is why he makes such a success of the business, and why the trees produce so heavily.

The number of capri figs to the Smyrna tree varies from 15 to 20 for six year old trees to 100 and 150 for 20 year old trees. This is adjusted automatically, as the capri trees increase production as fast as other trees grow to need them. The figs are put in cylindrical wire baskets, one or two baskets to the tree, depending on size.

About five capri varieties are needed, as some ripen earlier than others, and some are hardier than others in winter. A good assortment is: Milco, Roeding No. 3, and Markarian Nos. 1, 2 and 3. These give capri figs as long as are needed in summer, while Milco and Markarian No. 1 withstood a temperature of 13 degrees this winter without losing a fig. With a similar assortment of capri figs to those named above capri troubles are at an end.

EFFECT ON ADRIATICS.—A few people think that the fig wasp will make the Adriatic better than the Smyrna. Mr. Markarian has the fig wasp get into the Adriatic figs and like everybody else, claims that it helps a lot, though the quality does not come up to that of the Smyrna. A much greater improvement is made in the Mission than in the Adriatic by putting out capri figs at the right time, and what is a very important point, a very few capri figs will do as much good on a Mission tree as very many figs on a Smyrna tree. A wasp can get into a Mission fig easily and come out and go into several more, while she has a hard time to get into either the Smyrna or Adriatic, and one fig is all she can attend to.

Mission growers should try this. The pollen the wasps carry makes seeds, and seeds make more sugar and weight development, and give a better flavor, so the more capri figs in a Smyrna tree, the bigger and better the crop. The more in a Mission or Adriatic orchard, the heavier the tonnage also, and the better quality of fruit.

HARVESTING METHODS.—Mr. Markarian takes special pains to produce a good fig. Although the figs dry on tree and ground, some fall when only half dry. He has a cement tank, half filled with salt water and immerses by means of a wire basket a ton of figs at a time for from ten minutes to a half hour. The figs are hoisted and dumped through a feeder into trays, which are stacked in the drying yard till the fruit is of uniform quality. This takes about 10 days, and is far superior and cheaper to the quicker sun drying. They are then dumped in sweat-boxes like raisins and taken to the packer, culls being removed. The Adriatics are not dipped, but sulphured.

Culls are mostly splits. They are worse some years than others, cool, damp weather being especially bad.



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Whatever you want to know regarding the planting and raising of flowers, trees, plants or vegetables you will find it in **Morse's Garden Guide for 1914**. It tells you just what to do and how to do it. The superb and exclusive varieties illustrated are life-like in appearance, and the book on the whole is a valuable and reliable compendium of garden knowledge. Send for it now as it is well worth having.

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San Francisco

Irregular weather, very hot weather, and so on will also develop culls, and rains will sour a good many, though Adriatics suffer worse than the others. In good years culls amount to only about two per cent. In bad years they will amount to eight and ten per cent.

Birds will do big damage. Two years ago they destroyed eight tons of fruit. This year and last a few boys with rifles were kept busy, and this summer killed 4000 birds, and there was hardly a bird picked fruit in the lot as a result.

The orchard on the best soil, and best attended to will give the finest fruit. However, the average Smyrna crop will run about 20 to 25 per cent extra fancy, about the same amount fancy, 45 per cent choice and 5 per cent cooking fruit, sold to bakers and pastry manufacturers. The choice fruit is split and packed in bricks as seen at fruit stands and grocers. The larger, finer figs can be sold whole, packed solid. A Turkish pack sells in New York for 10 cents more than any other pack of fig. It is the cheapest, cleanest and best way to pack and sell figs and deserves big development.

It is only recently that the market

(Continued on Page 42.)

Now is the Time
To Plant

TREES

Millions
of Dollars

are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

A Splendid Income

provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection. Call and talk it over with us, or write for our 1913-14 catalogue.

Smyrna Park Nurseries, Inc., Ceres, Calif.

Sempervirens Cactus Farm

JOHN ZUUR, Prop., Santa Rosa, Cal.

Ask for 1914 Catalogue.

Transplanting Large Olive Trees.

To the Editor: The trees of my olive orchard are set 25 feet apart, and many of them are beginning to crowd each other. It will evidently be necessary to take out every other tree soon. I have heard that the trees removed in this manner can be replanted elsewhere. Is this really feasible with 10 to 20-year-old trees, and has it been done sufficiently long ago anywhere to test it? I have no doubt that it is an expensive undertaking at best, and am inclined to think that in the long run it would be more satisfactory for a number of reasons to set out new trees than to gain a few years by this method. What is your opinion and advice in the matter? Also, will you please give me a brief account of the manner in which such trees are taken out and transplanted?—A. E. A., Wallace.

Old trees can be transplanted successfully, but, as you suggest, at such great expense that it is usually better to plant a new one if you look only to the profit in it. If you wish to get a grown-up dooryard quickly, perhaps you may say: condemn the expense. If so, with olive or with citrus trees, go to the job after the heavy rains are over and the ground is getting warm—say in February—cut back not less than one-half of the top. Trench all around to a depth of three feet; the inside edge of the trench about two feet from the trunk of the tree. At the same time remove top earth down to the roots to reduce the weight. This trenching cuts off all side roots and gives you room to get in to handle the ball of earth, which you will rope up with barley sacks under the ropes so as to hold the ball from breaking. When you have done this well, dig in and under the tree from the bottom of the trench so as to cut off the bottom roots. You can carefully pull and pry the ball to see that it will wobble a little in the hole to show that all the roots are cut. Then get ropes and sacks under the ball, rig up a derrick and block and tackle and lift the balled tree out of the hole, land it on a low truck and haul it to a new hole previously made ready, and lower it into place by the same tackle which lifted it. Fill in with fine earth and water—settle it to fill all cavities—covering with loose earth several inches to keep from drying.

Large deciduous trees can be removed when dormant with much less labor, but it should be done late in the fall—as soon as the soil is deeply wet by the rains.

How Mr. McLAREN DOES IT.—A way to transplant large trees which cannot be cut back much because they have to be handsome right away, has recently been worked out by John McLaren, the able superintendent of Golden Gate Park, who is now doing the landscape work for the Panama-Pacific Exposition. Transplanting successfully the thousands of great trees, some of them even from India, the Philippine islands and tropical America, to the grounds of the Panama-Pacific International Exposition has proved the greatest task Mr. McLaren and his corps of experts set for themselves when they laid out the plans for the garden which will form the setting for the great exhibit palaces.

The majority of the trees are scores of years old, some even bearing a hundred or more "year rings," and to dig these out and transplant them long distances to the exposition without a

large percentage dying was at first believed to be impossible.

Then the "six-month side-box" system was originated by Mr. McLaren, and so successful has it been that the number of failures in transplanting has been so small as to be negligible.

A rectangular cut is made to include a square of earth in the center of which is the base of the tree, and some little distance from the outer edge of the trunk, with a giant knife seven feet in length. This effectually severs the side roots and the tree is nourished only by the bottom ones.

Boards are then forced down these cuts to prevent the severed roots from joining together again, and the tree is then left alone for six months. At the end of the six months the tree has accustomed itself to living by its much shortened side roots and its bottom roots. The time has now arrived when these latter may be severed, and the tree carefully boxed to enclose its cube of earth and transplanted, with well adapted hoisting and hauling machinery. Such trees can be moved long distances and endure much time in their portable habitations. The cost would be, from the point of view of private expenditure, something fierce, unless one should be a millionaire or more.

CLEAN HOT AIR FOR FROST PREVENTION.

To the Editor: As I get much valuable information from the PACIFIC RURAL PRESS, and Prof. Wickson's books and from the letters that are published I will give to you for publication, the idea of a system of protecting all orchards from loss by frost, which I believe will be more reliable and convenient and take less labor than any now in use.

Many years' experience with mechanical engineering work, and nights spent working with fires and oil pots in our own orchards, caused me to think of and work this system out. I have described it to one of the most experienced fruit growers I know, and both he and I believe in the system. It might be patented and turned into a money making scheme, but I have decided to give the idea to the fruit growers of the world, for the first time and free, through your very useful paper. By many men all working on this idea of mine, they will perfect it sooner than any one man or company can alone. Then all who are interested enough to build and use the system will get profit and save much disagreeable labor and loss. All the profit I look for is the satisfaction I get from having given a good idea to others, and the use of the system among our own trees. This may not be wise in a business way, but if I am willing no one else has any reason to object.

THE PROPOSITION.

The plan or system briefly is this:

Get a steam boiler and engine of proper size for the number of trees you want to protect.

Rig up a coil of steam pipes and a blower, to be driven by the steam engine.

Discharge the exhaust steam from the engine and as much low pressure live steam as is required to supplement the exhaust steam with the coil of steam pipes.

Pipe through light weight galvanized iron pipes, covered with asbestos

paper, this hot air so generated to every tree you want to save from frost.

The trees will support the pipes about the top of the stem or trunk of the tree. Discharge warmed air among the branches of every tree from a small lateral pipe, that has a baffle or hood a few inches above the top end of the small pipe. This will cause the hot air to circulate all through the tree and not go straight up.

In this way we can get a circulation of dry, warmed air, all through every tree, be it a dozen or 10,000 trees. We can make the air circulate fast or slow and hotter or cooler, according to how much or little frost we have to contend with.

One engineer can, on a few minutes' notice, after he gets up steam, have warmed air going into every part of every tree, no matter how large the orchard may be. His only work will be to keep up steam, keep the machinery going and watch his thermometer.

While the system is much more ex-

tensive than an oil pot, it is much more effective. No dirty smudge; a positive circulation of air; it can be started on a moment's notice and will work in all parts of the orchard at once; it will raise the temperature to any desired degree in any tree and keep it at that degree as many hours as necessary.

The system can be erected before time for frosts and taken out of the orchard and stored for another year after danger of frost is past.

Now that I have made this idea public and free, I will be pleased if different men who use it will report any improvements they make and publish them for the benefit of all fruit growers.

Most of the largest buildings have been heated this way for many years, so it is not an untried idea. But I never have known of it being used to protect trees from frost.

ALEX. T. GIBSON.

Chico, Cal., Dec. 19.



Leonard Coates Nursery Company

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Pedigreed French Prunes.
Pedigreed Blenheim Apricots.
Walnuts; grafted and budded.
Burbank Cherry; good stock.

Full Assortment Grape and Almond Trees, Berries, Grape Vines

Magnificent Stock

Peppers, Acacias, Toyons, Roses, Pistache, and 300 varieties Ornamental Trees and Shrubs best suited to California conditions.

Landscape Gardening a Specialty

Correspondence with Park Superintendents and Landscape Architects solicited. Send for Catalogue.

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Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station \$1.96½ gave \$22.11—over 1000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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"Perfection of fineness in grinding," our motto.

300,000 FIRST-CLASS ORANGE SEED BED STOCK.

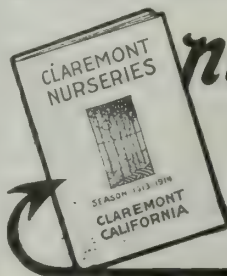
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Trees, Plants, Shrubs, Roses, etc. We have the finest Ornamental Stock in California. Our packing and shipping facilities are unsurpassed. If you anticipate planting Apples, Roses or any other stock, write for our beautiful 1913-14 Nursery Catalog, which is full of fine illustrations and of interest to every planter.
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What's in the Soil?

There's nitrogen, phosphoric acid and potash in your soil. Every pound of butter, bushel of wheat, sack of potatoes or bale of hay you produce and ship elsewhere, takes some of these soil elements away. Every horse, cow, sheep or hog that you sell also carries away a certain quantity of these same vital elements. Each crop produced eats up some of the raw materials in the soil.

You must have those raw materials or you can't go on producing. You must replace the vital elements taken away by the crops or live stock, else you get poor crops and no profit for your labor.

Science has discovered how to replace those elements, what to put into the soil to make it continue to produce profitably. It is simply to put back what was taken from it.

In our packing plant we have a by-product called "tankage"—the bones, blood and refuse from slaughtering. The animals consumed the forage from the soil containing these vital elements. When dried, ground and blended in scientific proportion with potash, the result is a fertilizer which again releases the soluble elements in the soil that produce profitable crops.

The materials in "Gold Bear" animal fertilizers are FROM and OF the soil—they go back into it to again do their work as no other materials can do.

In the blending a different formula is used for different needs. Tell us about your soil; what crops you have raised; what crops you want to raise—and we will tell you what formula you should use.



Write for the Fertilizer Book, Free.

Western Meat Company
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FOR SALE CITRUS SEEDBED STOCK

Florida Sour and Pomelo.
Large, healthy, and absolutely clean.

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ORCHARD CO.,**
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CALIFORNIA NATIVE PLANTS

Write for my new price list of California Native Plants, containing fifty-eight choice species, all of which are worthy of a place in any garden.

THEODORE PAYNE,
845 S. Main St., Los Angeles, Cal.

Orange Growing in Brazil.

Our famous Washington navel orange came from Brazil originally, and A. D. Shamel of the U. S. Department of Agriculture who has done so much good work in investigating citrus varieties and habits, in California, is at present in Brazil studying citrus trees there and searching for things of value to the citrus industry in the United States. In one of his letters from Brazil he tells certain facts about the industry there which should be of interest here. In this he says:

INJURY FROM ANTS.—"We find that the orange tree troubles here are like those we have in California, with many additional ones. The most serious trouble is a species of ants. These ants cut the leaves off the trees for the purpose of growing mushrooms in their colonies. The ants live upon mushrooms, and the only object in cutting off the orange leaves is to mulch the mushrooms. These ants have colonies made up of small cells about four by six inches, called panellos. The panellos connect with small channels about a half inch in diameter, and when danger threatens the ants close up the channels. For this reason it is almost impossible to destroy all the panellos. If only a part are destroyed the ants soon repopulate the colony. In many cases orange trees have been defoliated in a night.

GUMMOSIS AND MOTTLED LEAF.—"The second most serious trouble is gum disease. It is almost universal. The method of treating this disease is to cut back the dead and dying top and grow a new top. In two or three years the new top can be grown, which is very fruitful. There is a common belief that the fruits born by such tops are better than those grown on the original trees. Another method of combating this disease is to set a new tree close to the dying one, which comes into commercial fruiting when the original tree is removed. In some cases a root sprout is budded instead of setting in an extra tree.

"The other most serious trouble is mottled leaf. It is much more common than in California. We have been told repeatedly that its remedy is manure. For this reason most of the large citrus growers have become dairymen. The manure is carefully conserved in cement buildings, and the liquid manure in concrete cisterns. The manure is applied on level land in the center of a square of four trees. The manure is mixed with earth, placed in a shallow basin and covered. On hillsides, the manure is applied in shallow basins just above the trees.

CULTIVATION.—"Orange trees are commonly planted 18 by 18 feet. The universal stock is a sour orange. It is not resistant to either gummosis or mottled leaf. The average crop is less than 100 fruit per tree. There are two crops each year, one ripe in December and the other in June.

"Normally the June crop is the largest and best, but this season, on account of climatic conditions, the fall crop is unusually good.

"Clean culture is usually practiced. This is all done with a hoe. It is all contracted for at the rate of \$3.30 per acre, and "cleaning" or cultivation is done from two to four times a year. Labor costs from 50 to 75 cents a day and corresponds to our Mexican labor.

"The fine roots are very near the

surface, frequently being directly on the surface. The soil is a heavy red soil, but on hillsides is usually badly washed. On level lands there is frequently a surface soil of sandy loam. The roots are deeper in the sandy than in the clay soil.

PICKING AND MARKETING.—"The fruits are picked by pulling or twisting them from the branches. Usually a stem five or six inches long is removed by this process. It is then piled in heaps like potatoes, sorted into two or three grades, according to size, and carted to market in baskets, flung over the backs of small horses or mules. Naturally there is great loss from blue mould and brown rot, and other causes, even in a short time in this climate.

"Few or no oranges are exported. If any are sent to Rio they are picked green so that they will carry better.

"The oranges are green or yellowish green when ripe. They are thinned skin and more juicy than ours, but they lack acid, character and quality.

"Little damage is done by scale, white fly and other insect pests, although no efforts are made to control them. They are kept in check by parasites. Nearly all the trunks and limbs are covered by lichens. The trees are also attacked by plant parasites, one of these being very serious. It has to be systematically removed from the trees, otherwise it soon kills them."

BENEFITS OF FOREST RESERVE.

Being the second largest range State in the Union, California is naturally much interested in the forage resources of the National forests which are pointed out in a recent communication to this paper as contributing to the maintenance of over 20 million head of live stock, which supply in part at least the demands for meat, hides, or wool of every State in the Union. The receipts from grazing, during 1913, though second to those from timber, were more than a million dollars, and showed an increase over the previous year in spite of the fact that the season was less favorable and the area reduced. Over 4 per cent more stock was grazed as the result of increased forage production and improvements in handling stock, especially sheep.

The system of range management employed by the forest service is held to offer hope of relief to the average citizen concerned over the dwindling supply of meat products and their alarming rise in cost. The national forests furnish abundant forage supplies, opportunity for the adoption of the best methods, freedom from livestock diseases, and protection in the enjoyment of all rights and privileges. Cattle from the Hayden National Forest in Colorado took the grand championship prize at the National Live Stock Show in Denver, and in many cases the lambs from the forests topped the market. Losses from predatory animals are growing less as the wolves, bears, and other animals are killed off by forest officers.

In this State stockmen have found that the U. S. Forest Service, has always been willing to co-operate with them whenever they have needed their aid and in many localities the live stock associations work in conjunction with the Service at all times, thereby insuring more efficient service for all parties interested.

- Lowest priced
- Simplest
- Most reliable.

The Bolton Orchard Heater supplies the needs of the large orchardists on account of its reliability and its efficiency. It is good for the small orchardist because of its low price and cost of installation.

200,000 sold in one season. Hundreds of orchardists using and recommending the Bolton Orchard Heater. Their words of praise are worth more than anything we can say. One man can light 100 in five minutes.

Send for booklet R.P. It contains information about orchard heating—names of prominent orchardists who are using it and facts not generally known and which are suppressed in high priced heaters. Send today.

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SAY, FROM FAR AND NEAR

If you are interested in new and better strawberries, unlike anything you have had before, write to Etter and get his booklet on strawberries he has originated and strong testimonials corroborating his statements.

These new hybrid plants are three to five times more vigorous than ordinary sorts and succeed where ordinary sorts fail. The greatest canning berries the world has ever produced and the table quality unsurpassed. Bred largely from our native species, making typical California plants to meet California conditions of soil and climate. Many plants ready December 1st.

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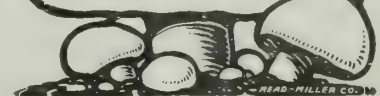
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Big profits—little work, no trouble. Anyone can grow them. Plant spawn now—first crop in six weeks. You can sell more than you can grow. You always get big prices. We teach you how. Free—furnish you with the celebrated ARNDT PURE CULTURE SPAWN guaranteed to grow. Write for interesting booklet.

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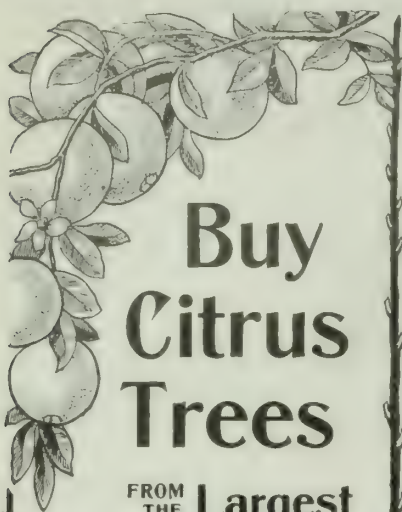


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When You Plant Buy Your Trees From Teague and Know What You Are Planting

TREES bought from miscellaneous small plots that have been planted and taken care of in a haphazard way may appear to the casual observer to be all right, but future years will demonstrate their inferiority.

We can safely say that Teague Trees are better than others because they are scientifically grown under the most favorable conditions. It has taken years and years of careful, watchful study and close application to reach our present high standard of excellence.

We ship to all parts of the world and can fill your orders in any quantity, large or small.

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Teague Trees are started right, grown right, and shipped right.

Citrus Standard of Perfection.

The ideal to strive for in orange and lemon production has been decided upon, itemized and described in detail for the National Orange Show to be held in San Bernardino, February 18 to 25, and for all other shows. The standard was decided upon after long investigations by citrus experts of California and elsewhere, many of the best suggestions coming from Spain and other Mediterranean countries. Commercial value was given full weight in the standardization also. Having such a standard should be quite a help in improving the quality of citrus products in providing a definite and authoritative ideal to work toward.

Figuring on a basis of 100 points for a perfect orange, the method of computation is arranged to include: pack, ten points; shape, ten points; stem, presence, five points; rind: color, ten points; texture, ten; thickness, ten; blemishes, five; navel or seed; size, three points; shape, one; prominence, one; juice: amount, ten points; flavor, ten; rag: amount, three points; character, two; weight, five points; size, five points.

By a similar computation arranged to meet the requirements of the lemon, the points of a perfect lemon are segregated—shape: type, five points; form, five points; stem, presence, five points; rind: color, ten points; texture, five; thickness, ten; blemishes, ten; seeds, number, ten points; juice: acidity, ten points; flavor, five; amount, ten; rag: amount, three points; character, two; weight, five points; size, five points.

The qualities necessary for each point have been minutely established.

POLLINATION OF WICKSON PLUMS.

To the Editor: I have half a mile of Wickson plums set on a ditch bank in 1909. The trees have made a fine growth. In 1912 and 1913 they were white with bloom. In 1912 we had a sandstorm and in 1913 severe frosts. I got very few plums. The trees run from north to south and are set 20 feet apart. I have been told I should set some other variety blooming at same time on the opposite bank of the ditch to fertilize the bloom. What do you think best to do, and if I should put out the other trees? What variety?—W. J. P., Sanger.

[Wickson is self-fertile so far as our observation goes and we have not heard of lack of pollination; still of course that may be the case under other conditions and especially with a long line of trees. We would like to know from growers the behavior of Wickson in solid blocks and in mixed plantings, for this would be a rough and practical demonstration of the matter. To pollinize Wickson, probably another Japanese would be necessary, for in our planting it blooms very early—earlier than any of the domestic varieties. Is this usually the case?—Editor.]

PUSHING THE PECAN.

Congressman B. P. Harrison of the Sixth Mississippi District offers a solution for the high cost of living. Take a lesson from the squirrels is his advice and eat nuts. To show his colleagues that a nut diet is highly nutritious, Congressman Harrison has distributed bushels of the Mississippi pecans in the House office building, some of them almost as large as Eng-

lish walnuts. He feels a sort of proprietary interest in the Mississippi pecan industry because the growers have named their product the "Pat" Harrison pecan, as most of them are grown in Mr. Harrison's district in the vicinity of Gulfport, Miss.

AFTER THE FRUIT FLY.

C. L. Marlatt, chairman of the Federal Horticultural Board, has called the attention of the House to the need of continuing the \$35,000 appropriation to put into effect measures to prevent the Mediterranean fruit fly from coming from the Hawaiian Islands and elsewhere to the mainland of the United States. An expert sent by Hawaii to Africa has found three or four important parasites of the fruit fly and two or three of the parasites are now established in the Islands.

"The Mediterranean fruit fly," warned Dr. Marlatt, "has not only threatened the fruit industry of Hawaii, but puts it out of existence, so far as the fruits which the pest particularly attacks are concerned. If it should cross to the mainland of this continent it might not only affect the orange, prune, peach and pear industry of California, but it might sweep across the whole south Atlantic and gulf States and destroy the peach orchards of Georgia and the orange groves of Louisiana and Florida."

THE IDEAS OF A FIG GROWER.

(Continued From Page 39.)

for California figs was properly developed at all, and an unlimited demand should result, for the expenses between producer and consumer need be small. Smyrna prices in recent years have run a little over five cents on an average, Adriatics three and a half cents and Black Mission still less. The proportion is about right, and makes production profitable, but prices should be better for all.

The cost of producing a ton of Smyrna figs to the acre with rather young trees is \$60, counting all expenses, taxes and interest, eight per cent on \$300 investment. Adriatics can be produced for \$10 a ton less. Heavier yields are more costly only in the handling of the crop. After the orchard is 10 to 12 years old it should yield two tons per acre. The trees should be 35 to 40 feet apart, and the older they get, the better. On the Markarian orchard they are given two good irrigations per year. Good cultivation is essential. Other work is small.

Mr. Markarian says he considers fig growing one of the best propositions in California, and that no person need fear going into the business if he has the right location, for there are no points in fig culture which cannot easily be learned as the orchard is growing, if one is willing to learn. He believes that from Merced south is the most suitable location for fig production.

There has been no doubt but what the Smyrna, White Adriatic and Black Mission have been only three varieties deserving serious consideration for extensive commercial planting. Experience on this orchard shows that the Smyrna outyields its greatest competitor, gives a finer quality of fruit, and one which will bring a better

price. It also shows that horticulturally and economically the Smyrna fig deserves a high place in the future of the State.

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Fruit Marketing at Winters.

[By the ASSOCIATE EDITOR.]

(Continued From Page 15 of Last Issue.)

An illustration of how the local fruit suits customers developed a couple of years ago in Europe. A customer tried to copyright the term "Winters" as applied to dried apricots, and competitors tried to stop him. There was a big lawsuit about it and a lot of free advertising as a result. Perhaps the quality of the fruit had much to do with the case, but probably the satisfaction of the customer in getting a uniform product had more.

SYSTEM OF GRADING FRUIT.—Most of the fruit handled is bought outright. However, if a stockholder wishes, he can turn his fruit into a pool, which is sold at cost price, allowance being made for overhead expenses, etc. There is a peculiar method used in grading this fruit, which may be profitable for co-operative organizations, for the problem of pooling fruit with satisfaction to members in co-operation is a difficult one.

The fruit on delivery is simply graded by inspection for size, color and condition, three grades for each. Each term is given a number. The fruit may be in size large (1), medium (2), or small (3); in color bright (4), fair (5), or dark (6); in condition good (7), fair (8), or wet (9). When graded the score is added up, and the better the fruit the lower the score, 12 being perfect, as 1 plus 4 plus 7 equals 12. The lowest score would be 3 plus 6 plus 9 equal 18. A difference of one-quarter cent per pound on apricots is made for every point, which pays members for taking pains to get good, well cured fruit. The quality of the fruit is indicated in the fact that the average score last year was 13½. It will also be held in mind that a large part of the finest apricots are shipped fresh and sold to the cannery, which indicates great care in fruit handling.

The Winters Dried Fruit Co. does good even out of the locality. For example, it is the selling agent for the almonds of the Guinda Almond Growers' Association, produced in the Capay valley to the north. The Durham Almond Growers' Association nuts were also handled this year. This association sells its nuts to the highest bidder, and the Winters company only had an option on them for a couple of days, hardly expecting to be able to pay the price, but was able to sell right off, making the first sale of the season setting the price of almonds for the year.

MANAGEMENT.—The manager, from the time of inception to date, is F. W. Wilson, one of the original members, a member of the preceding organization, and a leading fruit-grower of the district, and it is very largely through his ability, interest and efforts that the company has been such a success financially and such a good influence in the markets. In fact, in all organizations, co-operative and otherwise, it is the leadership and management that is the fundamental reason for success or failure. This organization is not co-operative, and co-operation is not highly thought of in the district in certain respects, but it is a growers' organization, managed on business principles, which helps to develop markets for fruit and get the highest price for it, and this benefits the whole fruit industry.

The Winters Canning Co. has no co-operative features whatever, being an out and out stock company, but with fruit-growers holding stock, the stockholders and directors in each being largely the same, and the effort being to make money through the fruit, not out of it. It has been running nearly as long as the dried fruit company and as successfully. One good reason for its existence is that the fruit put up at the point of origin is of better quality than that which has sustained long shipment. There is also a saving in freight charges.

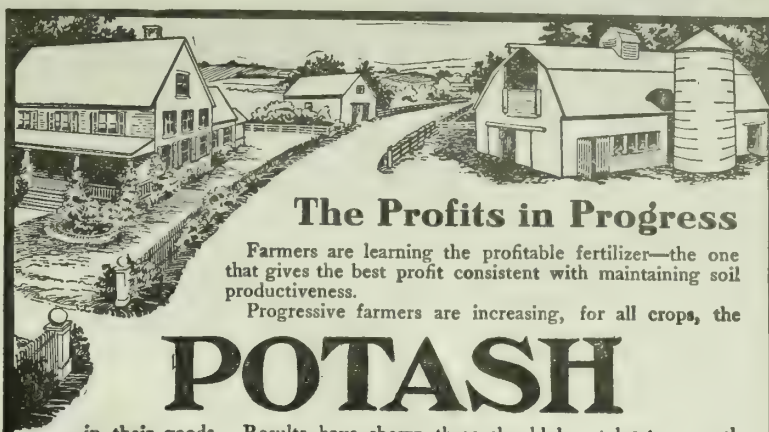
An illustration of the saving that might be had in buying local fruit is given in the cling peaches. Several carloads of these are brought from Sutter county, the great cling peach district, simply because hardly any clings are raised in the Winters district, and every cannery company has to have fruit of all kinds. There is the cost of over a dollar per ton in the buying and delivery to the cars of the peaches at Yuba City, plus several dollars freight, plus about 2% loss in shrinkage and deterioration in the haul. As good peaches raised at Winters would thus be worth about \$5 per ton more than the grower at Yuba City would get, provided as good a peach could be grown, and the difference at best would not be much.

However, that is only a hypothetical situation. The essential point is that there are great advantages in a local cannery in the quality of fruit produced at point of canning, in saving of handling charges, etc. This is the excuse for the starting of local canneries, especially co-operative canneries, hardly one of which has been able to endure. This one has, and its success is due to being run on business principles, which has been the case with few co-operative canneries, and in turn, the business principles have developed on account of it being a stock concern with business men at the helm. At all events, its work shows the possibilities for a local cannery and the benefits of the same to the locality when run for the benefits of the locality.

The third concern of public or semi-public scope is the Winters Fruit Growers' Association, which is solely a co-operative concern, as are many other branches of the California Fruit Exchange, and therefore need not be spoken of in detail. This is organized on just the same lines as the citrus associations in California, which for the shipping of fresh fruit has proved entirely satisfactory and a model to follow after. This concern shipped this year 87 cars of fruit and is growing in membership and favor with its members continually. Like similar organizations elsewhere, even the growers who ship through the old line companies pat the members on the back and say, "Keep it up, old man; we are sure to get square treatment when you are here." Thus it does direct and indirect benefit.

Winters is an old fruit district. The fruit acreage is increasing, and the fruit methods are advanced. It is not unreasonable to attribute the condition of the industry in part to the fact that whatever way a man wants to sell fruit, he has an organization managed for the benefit of growers to deal with.

A big acreage will be planted to hay near Orosi this year.



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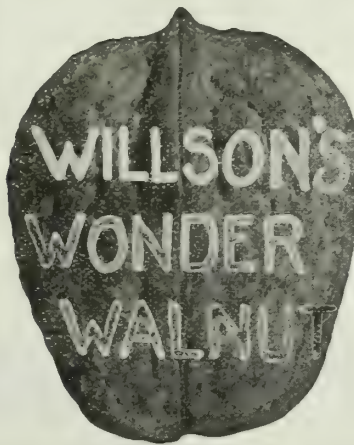
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Constructive Agriculture—No. 2.

Needs of the Pure-Bred Dairy Sire.

[The following communication treats of a matter that is fundamental to our great dairy industry, being closely related to other lines of live stock production also. It not only deserves a place in our "Constructive Agriculture" department for showing where a need lies, but also is truly constructive in suggesting a method of improvement. We, of course, strongly welcome the ideas of breeders and others on the plan Mr. Hillier suggests. —EDITOR.]

To the Editor: I note that you are starting a column in your paper devoted to the discussion of ways and means of bettering general farming conditions. I think the idea is a good one, and would like to make use of the columns of your valuable paper to suggest, and invite the discussion among breeders, of one or two improvements which appear to me as emphatically necessary in the interests of farm stock in general.

It is a fact well known by anyone who has traveled in any way far afield over the dairy sections of this State, that, notwithstanding the various efforts the different farm journals have been making toward educating people to raising better stock, a very large percentage of the dairies in this State are run with cows that would not even make a good hamburger steak.

Wherever one goes he finds here and there, possibly more thick in some sec-

tions than in others, a certain percentage of good stock owned and handled by careful and intelligent dairymen, on the rest of the farms a good cow will be found here and there, but she stands out like a jewel in the mud, among the collection of wedge-headed, slab-sided creatures that are (save the mark!) by courtesy called dairy cows.

These animals might well be termed the "hobos" of the dairy world. They are a heterogeneous conglomeration of breeds, probably comprising four or five different strains wrongly called "grades" by people with generous imaginations, and their breed is determined according to the more predominant characteristics of any one of the several breeds that appear in their makeup. The man who first acquires these "cows" does so under the illusion that he can feed them with costly hay, and from the milk and butter-fat they produce lift the mortgage from his farm and make him an independent livelihood. To help him out in this laudable endeavor he probably takes home a bullet-headed bull that possesses no further recommendation beyond the fact that he is a bull and looks something like one of the dairy breeds.

After "boarding" these cows for a period of greater or lesser duration, determined mainly by the brains and tenacity of their owner (and the tenacity of some people is wonderful),

our friend with the mortgage to lift and a family to support, suddenly sees a great white light and delivers himself of the time-worn misstatement that "farming doesn't pay." He then naturally—for we are but human—proceeds to sell his herd of unprofitable cows to some other fellow, and in the course of events we naturally have another disgruntled man who is convinced that "farming doesn't pay." So this traffic in scrub cows goes on day in and day out, year in and year out, ranging from sales of individuals to carload lots, causing immense retrogression in the standard of live stock in California.

The reason for all this retrogression or stagnation in the merits of live stock is so plain, and so easily remedied, that it is astounding to me that the more intelligent men, who apart from selfish motives, have the general welfare of live stock conditions honestly at heart, have not taken this matter up and summarily disposed of it.

The fact, as before stated, that men who purchase scrub stock promiscuously, usually purchase scrub bulls to go with them, is the whole cause of existing conditions.

It has been well proven beyond the question of a doubt that the confusing of blood lines is excessively detrimental. Take two animals, for the sake of argument let us say a pure-bred Jersey bull, a desirable sire in every respect and a pure-bred Holstein cow of equal desirability. It has unquestionably been shown that the first calf, let us say a heifer, obtained by crossing these two animals is in most cases a fairly desirable individual,

combining the characteristic good qualities of both breeds. So far so good. But, it has also been unquestionably proved that by crossing the animal thus obtained to one or other of the breeds, no matter how good their individuality and butter producing proclivities may be, a conflict in blood lines is started, and the resultant offspring is invariably an inferior animal.

Going further. It has been conclusively shown that by breeding this inferior animal and its resultant offspring to a series of meritorious bulls of one particular breed, that the blood lines of these bulls gradually predominate and the original taint of conflicting blood lines is eventually eliminated, and after two or three generations we have produced an animal who is to all intents and purposes a pure-bred with all the merits and characteristics of the breed that has been used to overcome the original blood confusion. But if on the other hand we take the original animal obtained by the first cross, as above mentioned, and cross in and out indiscriminately to the two breeds; no matter how excellent the sires used in these various crosses may be, the resulting animals by nature's law, which abhors blood confusion, are invariably inferior, and the greater the conflict the greater the inferiority of the individual.

All this may be wearisome and old news to breeders who have studied live stock "eugenics." I merely introduce it as a corollary to the following indisputable fact. That, if by using pure blood animals of proven worth, and

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with them causing blood confusion we get inferior animals, how much greater will the inferiority of animals be who are the offspring of individuals in whose veins the blood of half a dozen or more different breeds are fighting for supremacy? Can we ever hope to build up our standard of live stock in this state when such a thing is permitted? I say "permitted" advisably, for I maintain that it is the duty of all men interested or in any way connected with the raising of live stock, to fight tooth and nail against anything that tends to deteriorate the efficiency of stock.

Though I myself am a breeder of dairy cattle and have hence confined my statements to that class of stock, the same lamentable conditions obtained today in every line of live stock in California. Scrub hogs, scrub beef cattle, scrub horses, scrub chickens, scrub everything are being raised, and what is more heinous, being sold daily. And nothing is being done about it.

True, the various dairy papers have been laudably dinning and encouraging the betterment of live stock conditions in the ears of the farm public, and to a certain extent have ameliorated present conditions, but at the best this method is a slow one and heart-breaking to those who have the welfare of live stock honestly at heart.

There is a class of men engaged in raising live stock whom you will find everywhere in disheartening numbers and whom at the risk of appearing libelous, I must term "boneheads." These men if they ever do read articles which would teach them methods of improving their stock and hence making them more money, either classify these articles as "hot air," written, presumably, by men who have nothing else to do and hence write them for amusement, or they do not bother their heads about it at all and go on in the old "boneheaded" way with the intelligent remark that the methods employed by their grandfathers are good enough for them.

This article is not written to reason with or encourage this type of man to do better nor in fact any type of man who requires a club to show him obvious facts. I am writing rather to the intelligent breeders, to whom these conditions are well known, advocating the use of that "club."

There should be a State law passed which would make it a punishable offense for any man wherever situated to use any other than a pure-bred sire on any animal in the State.

This is not a visionary or impractical Utopian idea. Pure-bred stallion associations have been formed in the past and have met with unqualified success. In some sections pure-bred bull associations have been formed and have met with the heartiest endorsement of the communities that have been enterprising enough to found them. All these improvements, however, have been organized locally by individual members with their own personal interest at stake, and nothing has ever been done, to my knowledge, towards making this a universal state-wide custom.

The question that naturally arises is "Yes, all very true, but who is going to do all this?" It should be done by one of the many live stock and breeders' associations that are organized throughout the State. Perhaps the California Live Stock Association embodying as it does in its membership, breeders of all classes of live stock, and being organized as it is for the

improvement of live stock conditions in the State, is the most logical organization to take this work up.

This article is not submitted in any spirit of arrogance, but is a statement, however poorly rendered, of a matter which I have honestly at heart and I would be glad to hear the views of other live stock men as to the feasibility of accomplishing such a reform.

GERALD O. HILLIER.

President California Jersey Breeders' Association.

GINSENG GARDENS.

To the Editor: Do you know of any ginseng gardens in California? Is it successfully grown in a cold climate as cold as 20° below zero in winter? Kindly let me know something of the cultivation through the columns of the PACIFIC RURAL PRESS.—SUBSCRIBER, Alturas.

[The Lilydale Ginseng gardens are near Santa Cruz. We have heard nothing lately of their operations. We are not inclined to discuss the plant for we have no confidence at all in its suitability to California except under conditions artificially secured at considerable expense which the traffic does not warrant. So far as enduring cold is concerned it is hardy enough for the roots go through the eastern winters in the woods where it grows naturally. The trouble would be on the other end; we do not believe it would live through the first summer with you unless you built a shade-house over it and filled the air with moisture in some expensive way.—EDITOR.]

PRUNING PECAN AND PERSIMMON.

To the Editor: How are pecans and persimmon trees pruned? We have a three-year-old persimmon with only two main branches. Will this tree split later on when the branches are laden with fruit?—A. B., Berkeley.

[The pecan and persimmon usually are headed to secure branching at the point desired and then allowed to shape themselves. The persimmon is a low headed tree and to a certain extent will shape itself, though care should be taken to see that sufficient main branches are started. The pecan is more of the walnut type and requires about the same methods of pruning as the walnut. Your persimmon tree is weakened by being divided as you describe, but it can be prevented from splitting by tying the two sides together so as to hold them in natural position when a heavy crop is on. It would probably be better, however, to remove the poorer of the two branches, straighten the other up to a stake and allow it to make its own laterals.—EDITOR.]

JERUSALEM ARTICHOKE.

To the Editor: Will you please inform me where I can get some artichoke seed, the kind used for hog pasture?—Subscriber, Los Molinos.

[Every leading seedsman carries Jerusalem artichokes for planting, or will get them for you. You can find seedsmen's names in our advertising columns. In writing for them, be sure to ask for Jerusalem or root artichokes, not the globe artichokes, which is a different thing entirely.—EDITOR.]

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AGRICULTURAL REVIEW.

Notes on General Farming.

A car of seed oats was inspected by Deputy Horticultural Commissioner R. C. Wylie of Santa Barbara and ordered sent back or cleaned. On the latter being done the seeds of 16 different noxious weeds were found.

The sugar beet factories of southern California, having made a price of \$4.50 per ton on beets containing 15 per cent sugar, against the \$5.25 price of last year, the Southern California Beet Growers' Association decided they could not grow beets at the reduced price. From Huntington Beach, however, it is reported that a big acreage has been signed up at the new figure. It is unlikely in most places that as great an acreage will be planted by a good margin as in former years.

The U. S. Department of Agriculture has issued a warning to potato growers against using second hand sacks that possibly have come from infected districts in Europe. The quarantine against potato diseases will keep out the potatoes, but the disease could easily be given by sacks which had contained diseased tubers, unless the sacks were sterilized.

Horticulture at the Exposition.

George A. Dennison, chief of the department of horticulture at the Panama-Pacific International Exposition, announces that the best possible advisory committee for his department has been secured. Among those who have taken positions on this advisory committee are: Secretary Baur of the American Carnation Society; J. P. Brown of the International Society of Arboriculture; Secretary Harry A. Bunyard of the American Sweet Pea Society; Secretary M. C. Ebal of the National Association of Gardeners; L. Merton Gage of the American Gladiolus Society; President L. A. Goodman of the American Pomological Society; Secretary Frank E. Gorrell of the National Canners Association; Secretary Fred E. Grover of the National Association of Retail Nurserymen; Secretary Benj. Hammond of the American Rose Society; Secretary H. C. Irish of the Chrysanthemum Society of America; Secretary C. E. Kendel of the American Seed Trade Association; Secretary J. P. Pilkington of the American Association of Nurserymen; Chairman Charles H. Totty of the New York Flower Show; Secretary John Young of the American Florists and Ornamental Horticulturists; C. P. Close, secretary Society for Horticultural Science; David Fairchild, president American Breeders' Association; Mrs. Charles H. Maynard, secretary Ladies' Society of American Florists; J. B. Wight, secretary National Nut Growers Association; Dr. J. F. Wilson, ex-secretary National Nut Growers Association; and Bertrand H. Farr, president American Peony Society.

One of the most interesting and unique displays at the Exposition in the line of flowers will be the red sunflower originated by Prof. D. T. A. Cockerell of the University of Colorado. The origin of the sunflower was in a plant bearing red blossoms discovered by Prof. and Mrs. Cockerell near their home. They transplanted this and crossed it with the Russian sunflower. The next year all flowers from the cross were yellow, but the following year some were red, and from these the color was fixed. At the

Exposition all stages of this work will be shown. This is but one of the many floral displays that will be made.

With the Fruit Men.

The fine preparation of the soil by abundant rains has caused cheerful tidings to come from many parts of California and a large amount of fruit planting will be done. From Glenn and Colusa counties it is stated that farmers have been unable to buy sufficient prune trees for their demands. Large quantities of cling peaches and almonds are also required in that part of the valley. The wonderful success of the olive has also caused a shortage of olive trees, prices rising to a dollar a tree in small quantities, nearly three times what trees could be bought for a few years ago. Orange trees are also in great demand and scarce. Bartlett pears and shipping plums are being planted in addition to the above.

Richard Campbell of Pennington, Sutter county, is to plant 95 acres to almonds. A large amount of almond planting is being done by others in the vicinity.

The strawberry business is thriving at Castella, Shasta county. Four growers have contracts to supply from 100,000 to 200,000 vines to planters elsewhere, mostly around Lodi and Niles. At least 600,000 vines will be shipped, of the Sweetbrier variety, as it is termed locally. It is claimed that Castella is especially adapted for the production of strawberry vines.

The Maywood and Heinz olive factories at Corning, Tehama county, are working at full blast. The first named pickles only Sevillano, or Queen olives, being one of two factories to make a success with this variety. The olives are bringing, it is said, \$2.00 per gallon, f. o. b. Corning. The Heinz plant is handling only Mission olives above 12-16 inches in diameter, smaller olives going to oil. It is said that D. L. Hughes of Corning made \$1100 from three acres and a half of Queen olives this year.

It is said that Exeter oranges practically encircled the globe this year, shipments having been made to Australia, New Zealand, London and points between. This district also made the first shipment of the season, a ten-car consignment to New Zealand via San Francisco.

Members of the Butte County Citrus Association received \$1.00 per box for oranges shipped, with something of a balance yet to come. The packing house has closed for the year.

Pruning has started to a moderate degree in Fresno county and about 1000 Japanese were employed a week ago, more to be put on later. A large amount of other labor is also used. Wages are \$1.75 to \$2.00 per day without board.

A copy of a bill introduced by Congressman Raker last month with the object of establishing a standard box for apples has been received at this office. The proposed size is 10½ inches at end; width of end 11½ inches; length of box, 18 inches, inside measurements, and representing 217¾ cubic inches.

A Stockton daily asserts that apples from Tuolumne county have proved much more desirable than northern apples in local markets, having excellent color, flavor and quality. Newton Pippins, Jonathans, Delicious, Bald-

wins and Black Bens were all highly spoken of.

J. O. Harris, formerly of Fresno, has been appointed district manager of the Producer's Fruit company at Lodi. J. V. Bare, the former manager, resigned

to go into the fruit business for himself.

The Consular Reports contain a statement of the dried fruit business of a Co-operative Wholesale Society of Newcastle, England. About \$200,000



Manzanillo Olives From an Armstrong Tree.

PLANT ARMSTRONG TREES

Manzanillo Olives

We have a magnificent lot of these trees as well as MISSION and QUEEN varieties, well grown, thrifty and clean.

Here is what one of our many pleased patrons has to say about our trees:

Lindsay, Cal., Dec. 18, 1913.

"Mr. John S. Armstrong, Ontario, Calif.

Dear Sir:—Regarding the olive trees purchased from you last spring, will say they have made an exceptionally fine growth; very much better than the two previous plantings from another nursery which had the same care.

In my mind the two main reasons for this were the good packing and the fine fibrous root system of the trees.

In fact, the proof of our satisfaction is that the order of 750 trees which you received from us some time ago for 1914 planting, was given without investigation of price or condition of trees in any other nursery.

We are planning some on planting another 80 acres. How long will your supply of the quality of our previous order last? Would like to plant 2000 Manzanillos and 1000 each Mission and Ascolano.

Yours very truly,

EL TORRES RANCH,

A. S. McKellar, Mgr."

Let Me Quote Prices on Your Requirements

Or, if you haven't quite made up your mind what you need, write, and I will be glad to advise with you as to what, how, when, and where to plant.

It will be to your interest to take it up with me if you intend planting olive trees, or any kind of fruit or nut trees, grape vines, berries, economic or ornamental trees or plants.

TREE AND PLANT BOOK, FREE ON REQUEST

Quarter Century Edition; 64 pages, illustrating and describing the products of our 300-acre Nursery Plant.

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JOHN S. ARMSTRONG, Prop., 420 N. Euclid Ave.

LIME NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of Lime

Send for Free Booklet and Prices

PACIFIC LIME AND PLASTER CO.,

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Grafted Walnut Trees

Placencia Perfection
Neff's Prolific
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IF YOU WANT FINE BIG TREES ON BLACK ROOTS,
STRICTLY TRUE SELECTED STOCK WRITE FOR PRICES.

McMILLAN CITRUS NURSERIES,

221 North Curtis Avenue, Alhambra, Cal.

FRESH HORSE MANURE

As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

COW MANURE.

SHEEP MANURE.

PACIFIC MANURE AND FERTILIZER CO.,

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OF INTEREST TO EVERY RANCHER

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160 Pages Invaluable to the Gardener, Rancher and Poultryman. 500 Illustrations

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TREES

FRUIT AND ORNAMENTAL

Of course you are going to plant something this season—but have you entirely made up your mind as to just what it will be?

Let us help you with your plans. Our 30 years of experience are at your service free of cost. Ask us for suggestions and advice.

1913-1914 Illustrated Price Catalog Now Ready

—Just off the press. Contains 56 pages. Beautifully illustrated. Lists and prices over 2000 varieties of trees, plants, vines, etc. Will be sent free on request to any address. Write for a copy today.

We Grow Everything that Grows

APPLES
ALMONDS
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EVERGREEN SHRUBS
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ETC.

Our book, "California Horticulture," is a reliable guide for every planter. 120 pages. Beautifully illustrated. Describes over 2000 varieties of trees and plants. Price 25c postpaid. Sent on receipt of stamps or coin.

**FANCHER
CREEK
NURSERIES**
GEO. C. ROEDING—PRES. AND MGR.
Box 18, Fresno, California

worth of dried fruit was handled, practically all from Mediterranean countries, California not being mentioned.

The International Waterways Congress.

The Internal Waterways Congress that has been called to meet in San Francisco, January 15 to 17, has been assured of a very representative membership. The committee of 15 authorized by the California Fruit Growers Association has been appointed by State Horticultural Commissioner Cook, and contains fruit men of prominence of northern California.

Other organizations appointing delegates are:

Sacramento Valley Development Association, Marysville Chamber of Commerce, The River Regulation Commission of Stockton, San Mateo County Development Association, Red Bluff Business Men's Association, San Francisco Real Estate Board, Chamber of Commerce of Sacramento, California Federation of Women's Clubs, Kings County Chamber of Commerce, San Jose Chamber of Commerce, Del Norte County Commercial Club, Turlock Irrigation District, Santa Cruz Chamber of Commerce. Delegates from many towns and cities have also been named.

The opening of the Panama canal in a way is the reason for calling the Congress, as in early days, when most freight came by sea, California towns along the Sacramento river and elsewhere that there was water communication, received and shipped most of their goods by boat. The building of railroads killed nearly all of this traffic, save with a few towns, and the coming of water transportation again by the canal will open up vast possibilities, if the internal waterways are available. Not all delegates will be favorable to the building of waterways, as there is a strong feeling that all water possible should be withdrawn from the streams and used for irrigation. A duty of the Congress will be to consider this problem carefully and take the steps that will bring the best public good. Governor Johnson will preside and deliver the opening address.

Pear Progress at the Rogue River Valley.

The Rogue River valley in southern Oregon is making excellent progress in apple and pear production, according to T. E. Scantlin, a prominent grower of Medford, who called at the office this week. Apples have for a number of years been the most important fruit but a good margin in the Northwest, but pear planting has increased rapidly enough to approximately divide the acreage with apples. Of the 65,000 acres in fruit in the Rogue River Valley, about half are in pears, though the bearing acreage is as yet mostly in apples.

The Bartlett is the leading variety, as it is in California, though there is a large acreage of the later varieties, especially the Winter Nellis, which has been bringing very high prices. One grower received something over \$3400 from an acre of Winter Nellis this year (gross).

The blight is the main backset to pear production in the valley, but is not serious and can be easily kept in control. The blight appeared some time ago, but was cleaned out in every orchard where the correct methods of control were practiced and only gave

(Continued on Page 55.)

J. H. HALE'S Peach Sensation



Mr. J. H. HALE,
Discoverer and Introducer of this Wonderful Peach

Obtainable Only from
William P. Stark Nurseries
STARK CITY, MISSOURI

Fruit-growers and orchardists everywhere proclaim this the greatest prize added to horticulture in decades. We were doubly oversold last spring. Order early to be sure of your trees for fall planting.

Firm, yet delicate flesh.
Half to third larger than Elberta.
Rich golden color, tinged carmine.
Perfect freestone.
Smooth skin, practically fuzzless!
Stands shipment like Apples.
Round shape for preserving.
Luscious peachy flavor.
Hardy in wood and in bud.
Ripens earlier than Elberta with long fruiting season.

Budded From Mr. Hale's Bearing Orchards

We have an exclusive contract with Mr. Hale for distribution of the J. H. HALE Peach. Our propagating buds are cut direct from his bearing trees. For size, flavor, texture, hardiness, shipping and preserving qualities and saleability, this peach stands unparalleled in America. Get in with the early growers! Start your orchard this very season—you'll realize the wisdom of this when market-buyers begin bidding for these amazing peaches. Experts call the J. H. HALE "The Million Dollar Peach." It'll pay you to find out about it today.

No Agents—Save 50%

We have cut out the middleman's profits. We grow our trees at Stark City, Mo., and sell to you direct by mail. So you save the 30 to 50 per cent usually paid for agents' commissions, traveling expenses, etc. And you get the benefit of personal dealing. We grow nothing but selected trees, all standard varieties, doubly guaranteed true to name by the strongest of guarantees.

We are prepared to furnish you the best of everything in apple trees, peach, pear, plum, cherry, apricot, quince, grapes, currants, blackberries, raspberries, gooseberries, roses, shrubs, ornamental and shade trees.

William P. Stark Nurseries

Station G 23,
Stark City, Mo.

Mail Coupon for New Catalog

William P. Stark trees have the highest reputation for quality. 120-Page Illustrated Catalog lists all desirable varieties. Prices in plain figures. Mailed on request.

William P. Stark Nurseries,
Station G 23, Stark City, Mo.
Please send me newest catalog, prices and full details of J. H. HALE Peach.

Name
Address

Agricultural Lime

Complete Fertilizers
Phosphate and Potash
Seed for cover crops

H. B. MATTHEWS,
733 Merchants Exchange Bldg.,
San Francisco.

Franquette and Mayette WALNUT TREES

Grafted on black walnut roots. Good bearers; good fillers; and blight resisting.

Write for our attractive prices.

Mira Monte Nursery

145 North Market St.,
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Dividend Notice

THE GERMAN SAVINGS AND LOAN SOCIETY

(The German Bank)

526 California Street.

Mission Branch, cor. Mission and 21st St.; Richmond District Branch, cor. Clement St. and 7th Ave.; Haight Street Branch, cor. Haight and Belvedere Sts. For the half year ending December 31, 1913, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Friday, January 2, 1914. Dividends not called for are added to the deposit account and earn dividends from January 1, 1914.

GEORGE TOUNRY, Manager.

PERFORATED TREE PROTECTORS



The only perforated protectors made, practically a small lath house about each tree, allowing at all times the free circulation of air as well as mellowing the hot rays of the sun while at the same time giving perfect protection. No moldy or smutty bark when using Our Wraps.

WHEN DOES THE TREE NEED PROTECTION THE MOST? You know, while it is young and tender; then let Us supply You with Protectors; it's the best investment you can make after setting out Your trees; if Your dealer hasn't them send Your order to Us and We will fill it promptly.

Write for Sample and Prices.

The Expan Protector Co.

935 E. Central Ave., Redlands, Cal.

FANCY GRAFTING WOOD

All Burbank's best varieties, including his Standard Prune, Splendor Prune, Pitless Prune, Sugar Prune. Also Imperial, Improved French and Robe de Sargent Prunes, Burbank's Formosa, Santa Rosa, Gaviota and Climax, best shipping plums, Vacaville Plum, the first very large blue plum to ripen, fine shipper. President plum, the best of all late plums. Burbank's Plum cots, a very fine new fruit; also Burbank's Cherry, Early Burbank, Early Chapman and all other varieties.

For prices write.

H. A. BASSFORD, Ulates Rancho,
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STRAWBERRY PLANTS

50c per 100 Plants

Klondyke—Brandywine—Lady
Tompson—Avery

Ask for special seed prices for large Growers.

WEST COAST SEED HOUSE,
116-118 E. Seventh St.,
Los Angeles, Cal.

California Dairy Products in 1913

The abnormally dry winter and spring of 1912-13 has been unable to stop the steady advance in California dairy production. The State Dairy Bureau has just issued figures on the butter and cheese output of California for the year ending September 30, 1913, which shows that we produced nearly a million pounds more butter than in the previous year and nearly that much more cheese. The butter production for the two years ending on September 30, 1912 and 1913 by counties follows:

County.	1912.	1913.
Alameda	689,774	300,330
Alpine	40,000	30,000
Amador	145,000	142,208
Butte	772,629	769,740
Calaveras	80,875	161,666
Colusa	490,000	443,089
Contra Costa	445,121	502,163
Del Norte	740,664	746,637
Eldorado	146,548	145,786
Fresno	4,414,404	3,878,239
Glenn	284,028	590,365
Humboldt	5,095,014	5,168,990
Imperial	4,110,736	5,398,228
Inyo	179,742	217,595
Kern	732,059	566,965
Kings	3,069,880	2,313,963
Lake	51,760	54,420
Lassen	225,000	208,000
Los Angeles	295,018	311,437
Madera	163,784	156,606
Marin	1,709,603	2,119,071
Mendocino	549,429	462,061
Merced	3,351,049	3,910,815
Modoc	54,400	30,000
Mono	4,200	10,800
Monterey	664,930	589,467
Napa	602,756	624,273
Nevada	90,290	63,554
Orange	104,965	75,000
Placer	186,500	93,554
Plumas	240,940	243,965
Riverside	92,676	104,770
Sacramento	1,900,417	1,936,560
San Benito	317,250	249,000
San Bernardino	89,613	95,866
San Diego	593,236	411,888
San Francisco	10,000	6,600
San Joaquin	1,336,344	1,215,644
San Luis Obispo	2,070,619	1,846,823
San Mateo	224,570	207,829
Santa Barbara	568,795	269,262
Santa Clara	336,839	375,614
Santa Cruz	182,500	233,136
Shasta	123,400	90,804
Sierra	140,550	140,000
Siskiyou	506,929	566,309
Solano	1,031,137	1,102,756
Sonoma	1,881,889	2,478,008
Stanislaus	6,894,225	7,541,900
Sutter	822,046	842,417
Tehama	144,284	321,165
Tulare	3,947,284	3,971,217
Ventura	48,276	52,887
Yolo	1,104,509	1,034,902
Yuba	112,390	118,310

Total 54,940,886 55,542,709

STANISLAUS RETAINS LEAD.—A striking feature in this list is the pre-eminence of Stanislaus county. It is but two or three years ago that Stanislaus county nosed out Humboldt county from the lead that the latter had held from the beginning. In 1912 the lead was increased and in spite of the drouth 1913 saw Stanislaus well over 2,000,000 pounds in the lead over the nearest competitor. This increase occurred while most other San Joaquin Valley counties fell off slightly in production or made only moderate increases. A noteworthy fact in Stanislaus county progress is that the increase occurred very largely through

keeping better stock and practicing better methods; in other words, the increase in production was much greater than the increase in acreage, a complimentary feature to the dairymen.

Just here it might also well be said that the above table is not the only measure of dairy production. It counts only butter, not butter fat. Neither market milk, milk consumed locally, sweet cream, condensed milk, nor cheese is counted in this table and inasmuch as there was evidently a greater use of all of these than in 1912, the total increase in dairy production by State and counties was quite probably much greater than the above table would indicate. In this table butter production is credited to the county where the milk was produced, not where the butter was manufactured.

IMPERIAL'S PROGRESS.—More noteworthy than any other feature for the year are the rapid strides of Imperial county in dairying. The increased production is more than 1,200,000 pounds, far more than the increase for the whole State. This is nearly double the production of two years ago, which was 2,885,332 pounds, which in turn was far beyond that of a year before. This puts Imperial in the second place and the steady uniform increase, kept up as it seems sure to be, evidently will make Imperial our banner dairy county in a few years.

A unique feature is that our three banner counties are located at practically extreme ends and middle of the State, Humboldt being a northwestern coast county, rainy, damp and with luxuriant natural pasturage; Imperial in extreme southeastern end, by nature a desert, reclaimed in the last decade by irrigation; Stanislaus irrigated also, but yet formerly a productive dry farmed county. Everywhere you drop in California you reach a dairy country. Our valley counties, it is true, are increasing most rapidly for dairying, but historically the coast counties provided the main dairy districts and they are getting more prosperous all the time. Various indications show that as a rule the apparent decrease in production of dairy counties was due to shipping milk to market, not to any falling off in production.

In nearly every place dairying was handicapped this year by lack of moisture and high alfalfa prices, so all signs point to 1914 being the most wonderful dairy year in California history.

CHEESE PRODUCTION.—A year ago Secretary Andreasen in his biennial report stated regarding cheese: "It is astonishing to note that 11,758,680 pounds of cheese, more than double the amount manufactured in this State, is received in San Francisco alone." He urges a greater production of this article, and it can be seen that there is an increase of approximately 17 per cent,

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

a very promising feature, considering conditions. This increase is more marked when it is noticed that there was very little increase in 1912, as the 1911 production was 4,640,491 pounds, or about as much as in 1912 and furthermore butter prices tended to draw cream to the butter maker, and dairy production in general could increase little.

The cheese output for the State by counties for the years ending September 30, 1912 and 1913 follow:

Amador	11,043
Butte	78,840
Fresno	129,615
Humboldt	199,157
Imperial	66,500
Inyo	8,175
Kern	54,700
Kings	139,375
Lassen	115,535
Marin	678,825
Merced	342,720
Modoc	6,000
Mono	18,300
Monterey	697,671
Napa	23,000
Sacramento	266,900
San Benito	419,959
San Joaquin	84,970
San Luis Obispo	254,403
San Mateo	142,740
Santa Clara	426,864
Santa Cruz	173,518
Siskiyou	10,852
Sonoma	163,000
Stanislaus	30,000
Sutter	268,370
Tulare	63,750
Yolo	45,588
Yuba	73,000

Total 4,785,617 5,574,780

PRICES.—Prices for the year were very good. Only once did the San Francisco weekly quotation for butter, which governs the butter fat prices over the State to a large degree, run lower than 26 cents and most of the time it was much higher. In 1912, which was a fine year for prices, it went below 25 cents for two weeks. In 1911 the weekly quotation was below 21 cents a week, below 22 cents four other weeks, and below 25 cents for 17 weeks altogether. The 1913 price was over 37 cents three weeks and the 1912 quotation over 36 cents only one week. However, the coming of New Zealand butter has stopped all that and until we make butter that is good enough to bar that out, or have a high tariff again, such high prices are not likely to again develop for a long time.

California butter prices fortunately depend largely on nation-wide, not local, conditions and production, and although everything points to 1914 being a banner year for production, it may also be a year of banner profits.

IMPORTED SHIRES

We offer for sale young mares and stallions from some of the best stock in England. Ages range from 1 to 4 years. These are all good individuals, and every one is absolutely sound. We also have saddle horses and driving stock for sale.

Correspondence and inspection of stock invited.

BLACK HAWK RANCH

Burlingame, Cal.
A. W. Ward, Superintendent.
Phone 131.

Belgian Stallions

Have for sale Bay 4-year-old, weighs 1950 in ordinary condition; took first premium at 1913 State Fair; his dam imported mare Rosebud, weighs 2318 lb.; took first premium and gold medal sweepstakes at 1913 State Fair.; sired by imported stallion Derby. Have at my place 30 colts by this stallion. A proven sure getter of fine foals. Also a sorrel 3-year-old, weighs 2000; will weigh 2300 when mature. His dam imported mare Lizzie de More; took second premium at 1913 State Fair as an individual; first premium as mare and colt, and first for mare and two colts under 4 years; sired by Derby. Prices reasonable and will make terms that will allow purchaser to earn good part of purchase price with the stallions. Call at my place and see these fine young stallions and their get.

H. L. WEST, Hamilton, Cal.

Salvador Stock Farm Shire Horses



When you buy a stallion, buy a good one. An inferior stallion is dear at any price. High-class stallions and mares always for sale.

HENRY WHEATLEY,
NAPA, CAL.

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts.

San Francisco

Shrinkage of Beef Cattle in Transit.

The U. S. Department of Agriculture has just finished the most complete experiments and observations ever made on the shrinkage in weight of beef cattle in transit. This gives much valuable information on the best methods of handling such cattle to prevent unnecessary loss of weight.

The investigation covered three years in various cattle raising sections of the West. The cattle were weighed at the point of loading, on arrival at their destination, and again after having rest, feed and water. The weight was also taken when the animals were sold. The records include the weighing of Texas and Northwestern range cattle and calves, and of corn-fed, silage-fed, and beet-pulp-fed cattle. In all 265 shipments were weighed, comprising over 19,000 cattle. Many of these shipments were several days on the road and in such cases were weighed at the unloading points as well as at the first shipping point and at the market.

The transfer of cattle from the farm or ranch to the market usually necessitates a drive to the railroad and a further journey on the cars. These drives may vary in distance from a few hundred yards to more than a hundred miles, depending upon the location of the ranch, while the railroad journey may consume any time from a few hours to several days. All cattlemen know that when their stock arrives at market they are usually lighter in weight than when they started. This loss in weight is called shrinkage.

REASONS FOR LOSS.—The loss in weight during the journey is due to excretions from the alimentary canal, from the urinary organs, and from moisture given off by the lungs in breathing. A portion of this loss may be regained at the market by the food and water taken into the system. The consumption of this food and water at the market is termed the "fill."

The shrinkage in weight of cattle in transit to market is the difference between the weight of the animals at the point of origin and the weight of the animals on arrival at destination. The net shrinkage is the difference in the weight at the point of origin and the weight of the animals when sold at the market after taking the fill.

The shrinkage of cattle in transit is such a variable factor that no one can say definitely how much it will be during a journey, but by the use of very large numbers of cattle an average shrinkage will be obtained which may be used as a basis for estimating the amount of shrinkage on cattle shipped under similar conditions.

RANGE OF LOSS.—The net shrinkage was found in the Department's investigations to range all the way from 15 to 75 pounds per head, or from 2.14 to 7 per cent, depending upon the length of time and other conditions. The time that the cattle were in transit varied from less than 24 hours to more than 72 hours. The normal shrinkage may be regarded as from 3 to 6 per cent of live weight.

The extent of the shrinkage depends upon various factors, among which are the conditions at the time of shipping and the treatment during the drive to the loading pens; the length of time the cattle were held without feed and water before being loaded;

the nature of the fill before loading—the greater losses occurring when this consisted of succulent grass, beet pulp or silage; the weather and climatic conditions at the time of loading, while in transit, and at the market; the character of the run to market, greater shrinkage naturally being caused by slow, rough runs; the time of arrival at market. If the cattle arrived just before being sold the fill was small. Cattle that were shipped a long distance and arrived at market during the night usually did not fill well. If they arrived the afternoon before or about daylight of the same day they generally took a good fill.

An exceedingly large fill at market is not desired, as it will detract from the selling price.

The shrinkage of cattle was found to vary in direct proportion to their live weight when conditions were the same and all other factors were equal.

The shrinkage during the first 24 hours is greater proportionately than for any succeeding period of the same duration. The shrinkage on cattle is proportionately smaller for each 12 hours they are in transit after the first 24-hour period is passed.

KINDS OF CATTLE.—The difference between the shrinkage of cows and steers is not as great as is ordinarily supposed. Steers will usually shrink somewhat less than cows of the same weight.

The shrinkage on calves seems small but under normal conditions it holds about the same proportion to their weight as is found with grown cattle.

The shrinkage of range cattle in transit over 70 hours during a normal year is from 5 to 6 per cent of their live weight. If they are in transit 36 hours or less the shrinkage will range from 3 to 4 per cent of their live weight.

The shrinkage of fed cattle does not differ greatly from that of range cattle for equal periods of time. Cattle fed on silage have a large gross shrinkage but usually fill so well at market that the net shrinkage is small. Pulp-fed cattle shrink more in transit than any other class of cattle, and also present a greater net shrinkage.

SUGGESTIONS.—For a long journey the common method of unloading for feed, water, and rest is to be preferred to the use of "feed and water" cars.

Cattle should be weighed before being loaded wherever practicable, since a comparison of this weight with the sale weight will show the net shrinkage. Moreover this weight at point of origin may be of material benefit to the shipper in case of a wreck or a very poor run to market.

There is no way of entirely preventing shrinkage in the shipping of cattle, but by judicious care in handling and feeding the cattle just previous to shipping the shrinkage may be lessened. If cattle are to be in transit for 24 hours or longer it is a good plan to feed about two bales of nice bright hay for each carload a few hours before loading.

When care is used in trailing the cattle to the loading pens, not driving them too fast nor too far in a day and giving them five or six hours a day to graze on the way, long distances may be covered with no apparent injury to the cattle. On arrival at the pens it is well to give the animals a light feed

of hay with a little water, or allow them to graze a short time before loading them, unless the grass is very luxuriant. An excessive fill of water or green fodder or grass just before loading is not good for the cattle, as it may cause them to scour in transit; then, too, they will not stand up as well in the cars.

SENDS \$400 PRIZE MONEY FOR COWS.

In a communication to this office J. L. McCarthy, Secretary of the California State Agricultural Society, states that the prize of \$400 which was awarded to Gilbert Trigg, of Ferndale, Humboldt county, at the 1913 State Fair has just been sent to the winner and that the Association has found that this is the first contest of the kind ever offered by a State Fair and the same received very favorable comment at the recent National Dairy Convention held in Chicago.

The prize was offered in the 1913 State Fair Premium List as Class 50, and read as follows: "To the owner of the herd of not less than 20 cows, which completes one year record of production in a regularly organized Cow Test Association, with the highest average production of butterfat per cow, \$400, provided two cows, selection of which and the display of the records of production by the herd, be approved by the Dean of the College of Agriculture, University of California, are exhibited at the State Fair."

The general feeling which Mr. McCarthy says existed at the Dairy Convention, was also strongly in evidence at the State Fair, the only disappointing feature of the contest being that there was only one entry where there should have been many more, but of course that was not the fault of the Association, but rather of those dairymen who had high producing herds

that did not avail themselves of the opportunity.

Even Mr. Trigg was disappointed, in this respect, as he stated at the time that he would rather have had competition in order that he could better compare his stock with others, and with the growing interest in cow testing associations it is to be hoped that more entries will be made in following years, if the contest is continued, which it is to be sincerely hoped it will.

FIRST JERSEY CONSIGNMENT SALE.

California is to have her first consignment sale of pure-bred dairy cows the coming spring, when G. O. Hillier of Modesto holds his annual auction of Jerseys April 2.

It is thought at this time that there will be between 80 and 100 head as the interest being manifested by breeders shows that such a method of selling has been a long needed addition to the marketing of pure-bred dairy stock.

There are many ways in which such a sale is a good thing, as it greatly aids the buyer in affording a large selection to choose from and makes it possible to purchase female stock in larger quantities than he can in any other way with the same amount of expense.

There is little question but what such sales are fine things for the breeders and especially the smaller breeders as in that way, such men can through co-operation, reach a larger number of legitimate buyers than they could through individual efforts.

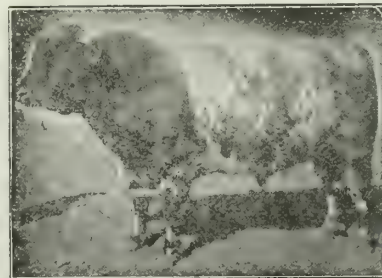
Such undertakings have been a huge success in the East and there is every reason to suppose that the coming sale will receive the support of both sellers and buyers, as it has been a long needed addition to the pure-bred stock business of this State.

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KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

Going East For Live Stock

Have now orders for thirty (30) head of high-class registered Holstein cows, part to be A. R. O.

Will visit the great Holstein center of New York.

Now is your opportunity to secure live stock to strengthen your herds and flocks for the Panama-Pacific, and have them ready to do their best in 1915.

Write me your wants or call and see me.

W. M. CARRUTHERS,

Phone: Kearny 456.

721 Hearst Building, San Francisco.

HOPLAND STOCK FARM

Breeders of Registered Short-horn Bulls ready for service, fit for range or otherwise. Shropshire Sheep and Berkshire Hogs. Hungarian Ponies, Saddle or Harness. Prices on application. HOPLAND, CAL.

The Sweet Clovers in California.

To the Editor: Will you tell me whether the sweet clovers (*Melilotus alba* and *Melilotus officinalis*) grow to the point of making a seed crop on the uplands and mesas in California, with average rainfall and without irrigation.—S. L., Shores, Va.

[The sweet clovers grow all too well with the moisture which makes a barley or wheat crop and are counted a great pest by grain growers because they impart their perfume to the grain, and it even goes into the flour and disgusts the bakers. We have no doubt that a seed crop could be produced with good dry farming methods in places which produce wheat and barley without irrigation, because the sweet clovers are good winter growers with us. They persist in making winter growth in alfalfa and sometimes lead the farmer to think that he has discovered a new kind of winter-growing alfalfa, but he soon learns that the intrusion of melilots into alfalfa is exceedingly undesirable because the plant is not generally acceptable to stock owing to its rank flavor. There is one point in working for a seed crop which we cannot answer but which you would need to determine. These melilots are counted biennials—seed bearing and dying the second year. If that were the case in California, it would be necessary to have summer moisture enough to keep the plant alive during the first dry season and this would be available in deep lands, for the plants root with a strong tap root like alfalfa. On shallow hardpan land which is sometimes found on our mesas quite abundantly,

it would be a question whether the plant could find moisture enough to carry it through the dry season. These are questions which we cannot answer for lack of opportunities for observation. However, the sweet clovers have a very bad reputation in California and are counted by growers generally to be very undesirable weeds. Only occasionally will you find a man who esteems the plant either for bee forage or for animal feeding. EDITOR.]

TO RECLAIM ARID LANDS.

Thirty million acres of land for a million farms! That is the amount of land, now unoccupied and worthless, which Secretary of Interior Lane would reclaim, and to begin to do it he must have \$100,000,000 from Congress. He will ask soon that Congress appropriate this amount, so that the Reclamation Service may open up 30,000,000 acres of arid land in 16 Western States.

The Secretary has heard the cry from the land-hungry, that cry almost as old as the world itself, and realizing that these 30,000,000 acres are about the last of the American Government's property available for settlement, he has decided to answer the vail of those oppressed by high cost of living and by the overcrowding of the cities by making this vast area bloom by way of government irrigation.

And the proposed investment of the Secretary—fully two billions when completed—will all be returned by way of the settlers. Statistician Blanchard of the Reclamation Service estimates that the territory will provide places for fully 1,000,000 families, for the tracts thus opened will be parceled out in lots of 30 to 80 acres suitable for intensive farming.

Owing to the fact that a large percentage of the land-hungry, are men of small means, the Secretary will urge that Congress extend the time of payment from 10 to 15 to 20 years. In such a period, Blanchard declares, the government can get its money all back, for present irrigation projects return annually \$20,000,000 and provide home sites for 26,000 families.

Practically every acre of the government's irrigated land is now filed on. Settlers are leaving the country to seek Canadian lands, and the city workers are clamoring for more cheap land as their one salvation. And the answer to their cry is Secretary Lane's proposed request to Congress.

REVISED DATA ON FRUIT CULTURE.

The cured fruit production given in the Agricultural Review of 1913 in the issue of January 3, 1914, was stated to be an estimate in several instances, revised figures to be given later. It now appears that a more accurate estimate of the cured fruit output in tons for the year is as follows, though even this estimate may have to be revised by the time that the crop of 1914 is ready for the market:

Apples	3,600	1,900
Apricots	20,000	9,700
Figs	5,000	4,500
Peaches	30,000	20,000
Prunes	102,500	45,000
Raisins	95,000	65,000
Sundry	3,000	2,000
	259,100	148,100

In 1912 the almond crop was 3,000 tons and in 1913 1,100 tons; the walnut crop 11,250 tons in 1912 and 11,750 tons in 1913, the largest yet, by the way, except that of 1911, which was 12,500 tons.

The honey output in 1913 was 3,720,000 pounds (estimated), in 1912 4,710,000 pounds and in 1911 9,500,000 pounds. The record was 11,532,000 pounds in 1909, so the falling off in production is marked.

The citrus shipments of last season were not given in the Agricultural Review. In the season of 1911-12 there were 34,329 cars of oranges and 5,961 cars of lemons shipped, or a total of 40,299 cars; in 1912-13 15,893 cars of oranges and 2,192 cars of lemons, total 18,085 cars.

The U. S. Farm Land Company will have 10,000 acres of the Chowchilla ranch seeded to barley this year, to say nothing of several thousand acres of alfalfa to look after. Three large plowing and seeding outfits are at work on different parts of the ranch.

DAIRY CATTLE.

FOR SALE—One pure-bred Holstein bull, Prince Beauty Pieterie Segis H. E. No. 84485, born January 12, 1911, sired by Beauty Pieterie, Prince 56435 and of the dam Belle Segis 86647. For detail information, inquire of Mr. A. Sutter, 815 Wells Fargo Nevada Bank Building, San Francisco.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

WANTED—Sixteen head grade Holsteins. Must be A No. 1. Test for butter-fat and weight of milk required. H. I. & A. F. Bobb, Fallon, Marin County, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Natl. Bank Bldg., Berkeley.

FOR SALE—35 head of registered and grade Jersey dairy cattle. Inquire of H. V. Traynam, College City, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

K. W. ABBOTT offers six registered Holstein heifers for sale. Milpitas, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

BLACK POLLED ANGUS, ten yearling bulls, entitled to registration. I have nothing but thoroughbred stock. C. S. Whitcomb, Exeter, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SWINE.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Ramboulllets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Ramboulllets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH, property of Mr. and Mrs. E. C. Rand—Fine young Berkshire boars for sale, March farrow. Route 3, Box 69, Santa Rosa, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

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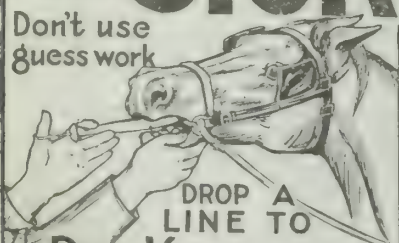
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Creamery Managers Start Work.

The California Creamery Managers' Association, which was organized about a year ago, started active work this week with the arrival of E. W. Major, who will act as secretary of the organization. Prof. Major was formerly head of the division of live stock at the University of California and later farm manager of the University Farm at Davis, but during the last two years has been in the East. One of the leading things to be taken up by the creameries will be the grading of cream according to quality. Other matters that will improve the standard of quality of dairy products and help out the industry will be taken up also.

SWOLLEN AND HARD UDDER

To the Editor: I have a cow that jumped over a board fence and got caught across her udder, about two weeks ago. The udder is swollen and hard and for a time I milked blood and matter out of two teats. The other two are O. K. I get water and blood out of those bad teats now but it is very little and the udder is still hard. Will you kindly tell me through your Veterinary Department what treatment I should use to reduce the swelling. I have used several different treatments but they did not seem to do any good.—K. A. P., Modesto.

ANSWER BY DR. E. J. CREELEY.

Apply the following ointment once daily after washing with 5 per cent solution carbolic acid: Zinc ointment 4 ounces, crystals iodine 2 drachms, tannic acid 2 drachms, extract belladonna 3 drachms; mix and apply.
San Francisco Veterinary College.

LIST OF HOG BREEDERS.

To the Editor: I would like to know if you can advise me where I can obtain a list of the principal hog raisers in this State or on the Pacific Coast?—C. G. K., San Francisco.

[You will find the names and addresses of all the leading hog breeders in California in our advertising columns, especially the Breeders' Direct-

ory. Those breeders whose names do not appear seldom cut much figure in the breeding world. From those whose names do appear you can get as fine a quality of stock as there is to be secured and you will find that they are located in all parts of the State also.—EDITOR.]

ABOUT "WOOD-TICKS."

To the Editor: Will you kindly refer me to the office or department under State control that would deal with the subject of wood-ticks. Do you know if any work has been done toward exterminating them? Is there any bug or bird that destroys them? Any information will greatly oblige.—W. S. WITHERS, Walnut Creek.

ANSWER BY W. B. HERMS, PROF. OF PARASITOLOGY, UNIVERSITY OF CALIFORNIA.

The only tick-control work carried on in California has been directed against the Texas Cattle Fever tick (*Margaropus annulatus*) with splendid success. Arsenical dips are systematically and generally used.

The wood tick of the genus *Dermacentor*, which is most common in your locality, differs considerably from the cattle tick above mentioned but inasmuch as this species as a rule infests cattle, also horses, dogs and other mammals, methods of control would not differ materially. The best references on the subject of tick control (other than the Texas fever tick) are, viz.: Bulletin 85, Montana Agricultural Experiment Station, also Bulletin 105, N. S. Department of Agriculture, Bureau of Entomology.

In reply to your second question I would say that ticks are comparatively free from natural enemies. I know of no parasite or bird that makes a specialty of destroying ticks.

Berkeley.

DE-NATURED ALCOHOL.

To the Editor: Can you give me the information through the columns of my esteemed friend THE RURAL PRESS, where can I have literature giving me the information how to manufacture wood or de-natured alcohol?—J. W. P., Porterville.

[Write to the Division of Chemistry, U. S. Dept. of Agriculture, Washington, D. C. for their publications on this subject.—EDITOR.]

S. Richardson, Sr. and Jr., will farm 4000 acres in the Tulare lake region this season, most being planted to barley.

There's no good reason why you should wait till spring before getting a

DE LAVAL

ON the contrary you may buy a De Laval Cream Separator NOW and save half its cost by spring. If, for any reason, you can't conveniently pay cash you can buy a De Laval on such liberal terms that it will actually pay for itself.

AS to your NEED of a separator, if you have the milk of even a single cow to cream you are wasting quantity and quality of product every day you go without one. This waste is usually greatest in cold weather and with cows old in lactation, and it counts most, of course, when butter prices are high. Then with a separator there is always the sweet, warm skim-milk and saving of time and labor, in addition.

WHEN it comes to a choice of separators De Laval superiority is now universally recognized. Those who "know" buy the De Laval to begin with. Those who don't "know" replace their other separator with a De Laval later—thousands of users do that every year. If you already have some other machine the sooner you exchange it for a De Laval the better.

WHY not start 1914 right in dairying? SEE and TRY a DE LAVAL NOW when you have plenty of time to investigate thoroughly. The nearest DE LAVAL agent will be glad to set up a machine for you and give you a free trial.

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Bulls For Sale

60 HEAD SHORTHORN BULLS

Highly Bred, Well Developed
Individuals in Good Condition

This bunch contains 3 registered bulls in every way fit for herd-headers.

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Multiply the value of your stock feed by mixing it with cut roots. Use less feed—keep stock healthy—help them show more profits—with the

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BAKER & HAMILTON,
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Fills Your Silo Quickly With Less Power and Labor

You can operate this machine with a 4 h. p. gasoline engine. It's the lightest running blower type of ensilage cutter made—The *throwing*, *blowing*, *lifting* force carries the ensilage in a steady full stream rapidly up into the highest silo without waste of power. The ensilage packs perfectly and keeps sweet and succulent. The

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is easy to set up and take down. Simple in construction, not easy to get out of order. The entire frame is one solid piece of semi-steel. The bearings are always in line, run smoothly and will not heat. The feeding mechanism is geared to the main shaft—always gives you the desired length of cut. The *Papec Ensilage Cutter* is not chain driven, but has heavy gears which transmit all the power. It cuts ensilage perfectly and swiftly—as fast as you can bring the corn to the machine.

Write for Illustrated Catalog. Send today for this book. It shows how The "Wonderful Papec" cuts ensilage with less power, time and labor, 25 convenient distributing points in the U. S.



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We offer for sale 40 head pure-bred Hereford Bulls.
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Purebred and Registered Rams and Ewes
For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.

CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.

INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

HOP BROS., San Ramon, Contra Costa Co., Cal.

OWS

We have a business proposition for you. If there isn't an S-R dealer near you, it will be to your material advantage to write and let us know. Get our Catalog showing 1914 models both for team and engine use.
SPALDING-ROBBINS DISC PLOW CO.,
62 Post St., San Francisco.

With the Live Stock Men.

Luis Titus, who owns a large ranch near Tracy where he is raising purebred Percherons, has recently purchased from the McLaughlin Percheron Company the stallion Londrecitos, which was a prize winner at the International this year and is considered one of the finest Percherons imported this year.

A new world's record for Red Polled cattle was made recently by the cow Pear, owned by a man near Duluth, Minnesota. For the year just finished she gave a total of 13,001 pounds of milk containing 605 pounds of fat. She also broke the record for that breed in her total yield for four years.

It is reported that a very successful experiment has just been finished by A. E. Wilcox of Orland, with spineless cactus fruit as a hog feed. It is stated that in feeding one pig he found that the gains were satisfactory and that the meat was of good firm quality.

Wm. Harrington of Inyo county recently purchased 30 head of dairy cattle from Fox and Sweetland of Kings county which will be used in strengthening his dairy herd.

Among the new sires recently purchased by the University of California for the University Farm at Davis, are a Berkshire boar and a Poland China boar that were purchased by Prof. J. I. Thompson, at the International Live Stock Show held in Chicago. While at the Portland Exposition Prof. Gordon H. True purchased a champion Cotswold ram, together with other desirable animals of breeds not previously represented at the Farm.

A report states that thousands of head of cattle and sheep are being shipped over the Salt Lake railroad to Southern California points from the big stock ranches of Montana, Utah and Nevada.

Henry T. Miller of Oakland recently purchased a 40-acre tract of alfalfa land near Modesto, which he will start a dairy on in a short time.

Among those who furnished purebred stock for judging at the Short Course School of Farmers, held in Modesto, last week were W. J. Hayworth, the Rancho Dos Rios, and J. B. Daggs.

Several hundred head of hogs were driven to acorn ranges near Inwood last week by farmers of that section who expect to handle them in a similar manner to the way sheep are handled. It is thought that they will make very economical gains in this way.

The Churchill Creamery at Fallon, Nevada, has just completed the installation of a large amount of new machinery which will greatly aid in turning out higher quality butter.

Hayes and Devaney received their first trainload of cattle from Arizona last week which were unloaded at Lathrop. It consisted of 700 head, mostly cows, which were taken from Lathrop to the Wash Trahin range near Chico, California.

land Union Stock Yards last week was not strong enough to elevate

prices on poor stuff, and only prices of grade stock advanced. Steers sold from \$7.75 to \$8.10, cows at \$6.80, heifers at \$7.00, bulls \$5.50 to \$5.75 and calves from \$7.50 to \$9.00. The swine market took a sudden upward trend and touched \$8.00 although \$7.90 was a liberal top for most of that sold. Receipts were light, Monday's receipts being the lightest for months. Fancy lambs featured at \$6.35 and mutton was dull, due to short receipts. Generally the market was on a steady basis for all kinds of stock to commence the new year.

L. Heinman of Wasco, Kern county, has just purchased 20 acres of land in that section where he will start a dairy in the near future.

It is expected that H. F. Strachan of Alameda will start a new dairy between the towns of Concord and Walnut Creek. It is his intention to sell his milk to customers in the two towns.

The California Live Stock Breeders' Association will hold their meeting at San Francisco Saturday, January 10. All live stock men have been invited to attend.

It is said that the feed in the hills adjacent to Williams is now in fine condition and that many of the cattle men are moving their stock from the lower lands to take advantage of the good feed.

San Jose is making a cleanup in the dairies who sell milk to the city milk trade and it is thought that the coming year will see big changes in the methods pursued by dairymen of that vicinity.

San Francisco creamery men have purchased the Rose City Creamery at Chico and will hereafter conduct the plant, as it is claimed that more than \$6000 a month is leaving Chico every month for butter.

The Crocker Huffman Land and Water Company received a carload of Mexican cattle at Merced one day last week. The cattle were shipped from Tucson, Arizona, and were in very poor condition.

That there is money in hogs was shown last week, when J. L. Updyke of Wasco, Kern county, sold 68 head of shoats for which he received \$725. It is claimed that they were raised on 12 acres of land upon which there were several head of horses all of the time.

A steer raised by W. F. Twist of Humboldt county, Nevada, was recently sold for \$150 which weighed 1985 pounds. It is believed that this is the largest steer ever raised in that part of the State.

The dairy cows sold at the A. B. Smith auction sale near Modesto last week averaged over \$100 a head, the highest one having sold for \$162.50.

J. L. Rayner sold last week 320 acres of land to local men who will improve it for a stock ranch, it being especially adapted for that purpose.

A trainload of beef cattle were shipped by Great and Company last week from Elko county, Nevada.

A rancher near Chico reported last

week that 200 cows were being held in a field near that town where there was no feed and that as a result they were starving. The local constable was told of the fact and it is expected will arrest the owner.

NEWS OF THE JERSEY FUTURITY CONTEST.

According to G. O. Hillier, president of the California Jersey Breeders Association, the Jersey Futurity contest which was recently started has stirred up more interest than any one thing that has happened among Jersey breeders for some time.

Providing that all of the entries go

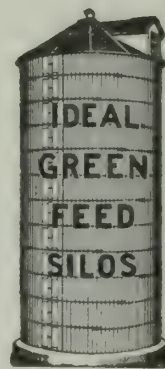
through until the first contest takes place, at the Panama Exposition in 1915, the purse will amount to \$240, which will be awarded to the winner and makes the stake well worth striving for.

Steps have been taken to interest the State Board of Agriculture and the Directors of the Panama Exposition, in giving a silver cup which will be awarded each year to the winner, first at the 1915 Exposition and in later years at the State Fair at Sacramento. Both Secretary McCarthy and I. D. Graham have assured the association of their co-operation on the matter and there is little doubt but that such a cup will be donated.

Start the New Year RIGHT

Erect an Ideal Green Feed Silo now and be prepared to get the full benefit of it during all of 1914.

Silos that were erected early enough last year to save the first cutting of alfalfa have now paid for themselves in the saving of feed and increased dairy profits.



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Law Enforcement by Dairy Bureau.

The State Dairy Bureau by inspectors continually is helping improve the standard of California dairy products and dairy methods. Although the policy is to improve by advice and suggestion rather than by force, occasions arise frequently where arrests have to be made. Some recent arrests and convictions are of more public interest than usual.

Few things could do more injury to dairying, to say nothing of the public, than watering market milk. Such practices are rather common with milk sold in restaurants, though less common with milk sold for family trade, and in San Jose between Christmas and New Years a general clean up was made, four or five dairymen being convicted and fined, one being given 20 days in jail as well as a stiff fine.

The history in each case was practically the same. Watered milk was found in restaurants. It was found watered at the time of delivery, which absolved restaurant keeper from blame. From there it was followed in some cases to creamery, in others to dairy, when the dairyman delivered direct and found watered on leaving the dairy. To make dead sure, the milk was sampled when drawn from cows, to prove that they did not give watered milk. This put the blame where it belonged for sure, and no trouble in securing convictions was found.

The most serious offense was that of Joseph Baumann, who had been convicted in 1912 for watering milk. He stated that he had been watering milk for 24 years but never had been caught before, and was shown to have been using six gallons of water per day. This water would sell for about \$1.00 and at that rate in 24 years he would have been paid \$8750 for water. He was given a fine of \$200, the limit under the law, and promised a jail sentence on next conviction. When the judge this time found evidences of liberal watering he again gave the extreme fine plus a 20-day jail sentence and promised jail sentences to other offenders if they appeared again. One restaurant man was also fined for skimming the milk sold to customers. Several of these convictions were secured with the assistance of city inspector, Dr. Browning.

A CONTRAST.—While such cordial co-operation by authorities was given in the above cases, the rather rare experience of indifference by authorities was found in another section. An extremely filthy dairy owned by men with plenty of capital was found last summer near Live Oak in Sutter county and notice was served on owners, who promised to clean up. They had not done so when an inspector visited the dairy on December 16, 1913, and a warrant was issued, which the authorities did not serve, and in about a week the case was dismissed by the justice on informal request of owner. Secretary F. W. Andreasen of the Bureau, however, is following the matter up.

We tell of the case largely to show what conditions the State Dairy Bureau sometimes has to remedy. Portions of a letter by Secretary Andreasen will show conditions.

"The dairy complained of is in the vicinity of Live Oak and was (when I saw it July 26, 1913) the most un-

sanitary dairy I have ever seen. About 15 or 20 cows were kept in a lot, or yard, of about two acres. In the center of this lot was a straw stack and no other feed of any kind. Near the straw stack was a dead horse partly devoured by hogs kept in the same lot, or yard. The dead horse was in a decayed condition and the odors from it were carried by the wind at least 1000 feet. At one end of the lot was the cowbarn which had never been disinfected by white-washing it, or by any other method, as far as could be detected.

"Built up against the cow barn, and between it and the dead horse, was a large shed used for hog pens. These pens were so dirty and full of filth that I could not see whether there were floors in them. The cream separator was placed in the center of this hog pen with nothing to separate it from the pens except dirty fences, and at six o'clock p. m. it had not been washed. The pens were within four or five feet of the separator. The dead horse was within 400 or 500 feet of the hog pen and separator. In the hog pen was a dead hog about 20 feet from the separator. No provision was made for washing or sterilizing the utensils, and the dwelling house from which hot water must have been carried was about a quarter of a mile away. The man in charge of the place said that he had no feed for the cows except the straw, the fences being in such condition that he could not turn them out and he had no mower with which to cut feed for them. They were at the time in very poor condition.

"A written and printed notice was served, specifying in detail the changes required to be made to place the dairy in a sanitary condition. On November 12, 1913, practically no changes had been made."

When the owner visited the place with an inspector and the unlawful conditions of the place were pointed out to him the separator had been moved out of the hog pen, but had been put in a shed which was within a few feet of an open privy vault and a horse stable.

On December 16 no changes had been made except that a man had placed his bed in the room where the milk and cream was stored and handled, and was using said room for a bedroom.

As above indicated, a warrant was at once issued, but the constable carried it around until December 23 without serving it. At that time the Justice of the Peace wrote down to the Dairy Bureau stating that the owner had visited him without the papers having been served and stated that delay in improvements had been due to inability to get materials and the case was forthwith dismissed. Possibly by this time the case has been carried to a successful completion, the dairy cleaned up and owner punished. It is to be hoped so.

Such dairies, of course, are a disgrace and a big detriment to the dairy interests. Filthy cream makes all the butter from the neighborhood bad and lowers the price to clean dairymen. Besides, it is a great public wrong to have to consume such contaminated foods. Dairymen themselves are the first ones to want to remedy similar bad conditions in their vicinity and

practically always cordial co-operation is given by dairymen and authorities in such cases. Such work of the Dairy Bureau has done much to improve dairying as much as it has improved in the last few years.

MILK STANDARDIZATION.—An interesting matter has been brought up to the Bureau for decision recently, and that is, the labeling of standardized milk, or milk from which butter fat has been taken away, or in some cases, added. For example, if a creamery buys milk that has four to five per cent fat, he will not wish to give his customers more than about 3.6 or 3.8 per cent fat, so removes a portion of the fat. That still leaves richer milk than the law requires by a good margin and much richer than lots of cows give. Furthermore some times milk comes in richer than others and he removes or adds enough cream to give customers the same amount each time. In lots of other cases dairymen who have thin milk skim a lot of it and add the cream to the rest, thus giving customers richer milk than the cows produce, so standardization works both ways.

Such milk properly standardized always contains more fat than the law requires, a full supply of other food materials and has no foreign matter added, so the practice is perfectly in harmony with public policy and business necessities. At the same time the letter of the law says that nothing shall be added to or taken from milk without such alteration being indicated by label. A creameryman asked an inspector whether standardized milk required a label and was told that according to the law it probably did and wrote to the Secretary about it. Since the practice is so common and frequently necessary without doing any injustice, it is hardly probable that anything could be done

about it forcing changed labels to be put on.

There have also been several convictions recently for short weight butter. Several months ago prosecutions seemed to put a stop to this practice, but gradually it was found that a few creameries were trying to make money by giving less butter and arrests resulted.

A DOUBLE ADULTERATION.—A rather funny case developed a few months ago, which fits in with the watering spoken of first. The dairyman thought the restaurant keeper who bought his milk could easily buy a little water too, and added a good dose. The restaurant keeper, perhaps without realizing what had been done, thought his customers would not notice a little water and added a good dose too. The result was that when the dairy inspectors came around they found milk that was half water. To see who was to blame they got the milk coming in and found only half as much water in it, and on the same milk both dairyman and restaurant keeper went before a judge.

Little things like that add interest to the work and it all helps to make better prices and better dairying, aiding the man who has good, clean milk, who otherwise would have to compete with dishonest and careless dairymen.

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Every package dated, unused pills returnable for free exchange for fresh after date on package. Do not use old vaccine, or of uncertain age (ours or any other) as it affords less protection than fresh.

Disinfect: 250 doses, 10 p.c.; 500 doses, 20 p.c. Insist on Cutter's. If druggist doesn't stock, order from Laboratory, giving address plainly. We prepay charges and ship promptly. Send personal check or M. O.

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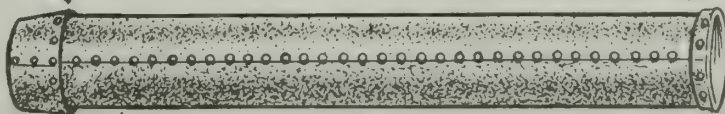
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Why We Need Waterways.

We commented last week on the desirability of attending the great Waterways Congress to be held in this city January 15 to 17. The following statement before the Commonwealth Club by Captain H. J. Corcoran, long connected with the navigation of inland waterways is important:

"When we consider the tremendous importance of the inland waterways of California, and remember how vitally they affect the prosperity of this state, we must marvel that so little has been done toward the preserva-

tion and improvement of their navigable character. Day by day the population of the two great valleys increases, the importance of the rivers increases.

"Up to this time it has been the policy to await the pleasure of the National Government, but experience has demonstrated that if we are to achieve results we must make some effort to help ourselves. It is an indication of the dawning of a better day that there is a movement on foot for the co-operation of the State and Federal Governments in the correction of the Sacramento river and for a survey of the San Joaquin."

Captain Corcoran described the condition of the rivers in the early days before hydraulic mining on the Sacramento, the Feather and other tributaries filled their beds with debris. Then, he said, the tide ebbed and flowed in the Sacramento river as far as the mouth of the Feather river, and the water alongside the docks at Sacramento was from ten to twenty-five feet deep and crystal clear.

The Sacramento boats then drew from seven to ten feet, while now the outside limit is six and a half feet. Captain Corcoran told of the times when competition was active in river traffic on the Sacramento as far as Red Bluff, and on the San Joaquin to Firebaugh, and declared that the welfare of the two valleys demands a return of these conditions. At the present time, he said, there is no real competition even on the lower stretches of these rivers, and the rates of freight between San Francisco and Sacramento are the highest, distance and service considered, prevailing anywhere upon the inland waters of the United States.

GRAFTING OR BUDDING THE WALNUT.

To the Editor: I have 300 seedling black walnuts in nursery (from $\frac{3}{8}$ to $\frac{1}{2}$ inch diameter) that I wish to work over to some of the best varieties. I have been told I can get a better and healthier tree and an earlier bearer by top-budding. What is your opinion? Shall I graft them where they are this winter or cut them off and bud on new growth next fall? Or shall I set them out in orchard this spring and work over later? I am after the best tree and earliest bearer if there is any difference in way of handling.

—J. W. E., Snelling.

[We would like to help you but there is a certain refinement and novelty about the "top-budding" into new shoots in their first summer's growth which is beyond our knowledge, as applied to the walnut, though it is a good practice with most other deciduous fruit trees. Our old-fashioned knowledge is that you would not get any good results at all that way. If any one knows better we shall be delighted to be told how it is done successfully. Under the circumstances we advise our correspondent to graft in the nursery those seedlings which are large enough to take a scion and let the others grow some more, or try a graft at the root-crown or throw them away. If the grafts put in this winter do not grow, plenty of shoots will come and they can be top-budded next summer—if we can find out how that is easily done. Our correspondent can therefore seize fast hold of both horns of his dilemma



Dead Squirrels More Crops

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SQUIRLGOPHENE

used with the U. S. SQUIRREL DESTROYER, will kill every squirrel on your farm and thus end their crop destruction.

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Inspectors are using KILMOL in the SQUIRREL DESTROYER in a great many sections of California, which is the best recommendation possible.

Government is the average cost for material for killing each squirrel; the average cost labor and material being from 18 to 28 cents an acre.

The KILMOL method is the quickest method known; all the time necessary to treat each burrow being

One Cent in the year, wet or dry, KILMOL can be used. Fire or water makes no difference to KILMOL.

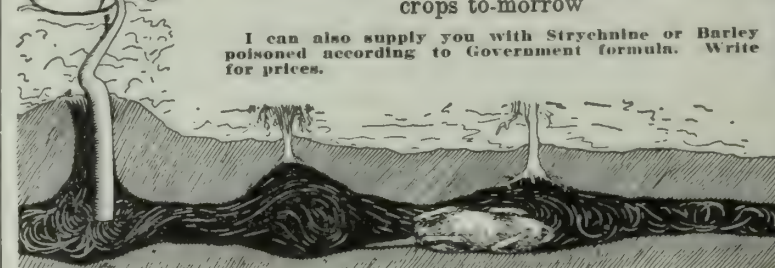
Every Day is the proved record of KILMOL. The squirrel can not escape. Failure is impossible.

100% Efficient It costs you nothing to learn all about this wonderful method—the best ever discovered for killing squirrels and gophers. Let me prove these statements. Send to-day for particulars.

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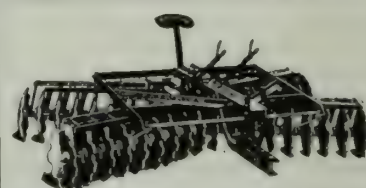
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at once. He can graft now without interfering with his chance the other way next summer. We are not aware that the way of grafting influences early bearing. That depends upon the scion and the rate of growth. We are disposed to remember that the duty of a young tree is first of all to grow well. We would rather have a vigorous young tree than one which bears prematurely; although we are quite ready to admit that a grafted walnut tree can sometimes do both successfully.—EDITOR.]

CURE FOR ALKALI SPOTS.

To the Editor: I have a piece of land with some low spots seeming to have some alkali. The land has been farmed to grain for a number of years. In plowing these spots plow deeper than the surrounding ground, being wet and somewhat boggy. Could these be overcome by filling in with good soil from surrounding points to a level with the other land? Would it be desirable to plow stalks or straw under in these spots, or would it have to be treated as you have described the treatment of alkali in the last two issues? I have plenty of water for flooding and the land can be well drained. The soil around these spots is fine and produces fine alfalfa and grain, while they do not produce.—W. B. B., Glenn.

[You could reduce the accumulation



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If you have an engine, you need this harrow. If you have no engine, you need both. Clark Discs are made from the best heavy cutlery steel.

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WHOLESALE DISTRIBUTORS.

of water in the low spots by filling them up to grade—in fact that is the proper thing to do in preparation of the land for irrigated alfalfa whether there is alkali or not because alfalfa will be killed out by excess of water whether there is alkali or not, if the soil is heavy enough to hold the water too long. If the spots are alkaline then you should first underdraw them, unless it costs too much, for then you get rid of alkali and it cannot rise later through your filling and make that alkaline also.—EDITOR.]

AGRICULTURAL REVIEW.

(Continued From Page 47)

special trouble where the proper directions for cutting out were ignored.

The output of fruit from the Rogue River Valley this season was 1200 cars and over. Prices were good.

The pears grown are nearly all shipped and follow California pears, so do not come into competition with them. The Oregon Bartlett also makes an excellent canning pear, if the growers do not find it profitable to ship, but the other varieties of pears with one exception are for shipping only.

A noticeable tendency in the Rogue River Valley is to go into diversified farming, though fruit growing is as popular and profitable as ever. The farmers are growing alfalfa on part of their land and frequently grow corn and other crops in young orchard. A great many hogs are also kept which make good use of cull apples and other fruit. The apples appear to make a fine quality of meat and the alfalfa and corn make up any deficiencies in the fruit diet. The most popular breed is probably the Duroc, though Mr. Scantlin raises O. I. C.'s and has excellent success with them.

Dispute Over Raisin Selling.

The proposal of the California Associated Raisin Company to eliminate all private brands of raisins is arousing lots of opposition in the East among the jobbers. The proposition was advanced a little time ago by Manager James Madison in a trade letter. These private brands usually are sold at higher prices than standard brands, and the idea was to lower prices to the consumer and thus increase consumption by eliminating them. The jobbers who get out the private brands object.

There has been friction between the Associated and the trade all year, in fact, and the jobbers claim that they have been able to buy at less than Associated prices. The jobbers claim that the Associated is apparently run entirely for the benefit of the growers, and say that they will appeal to the Interstate Commerce Commission, on the ground that the Associated is acting in violation of the Sherman Anti-Trust Law. There appears to be little likelihood of any such thing being done, as the Associated Raisin Company is clearly not breaking any anti-trust laws.

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IT TELLS YOU
THE IMPERIAL IS THE BEST
PLOW IN THE WORLD NO MISTAKE
AND YOU KNOW IT.



Molds, Landsides and Shares are interchangeable, in steel, chilled or cast iron.

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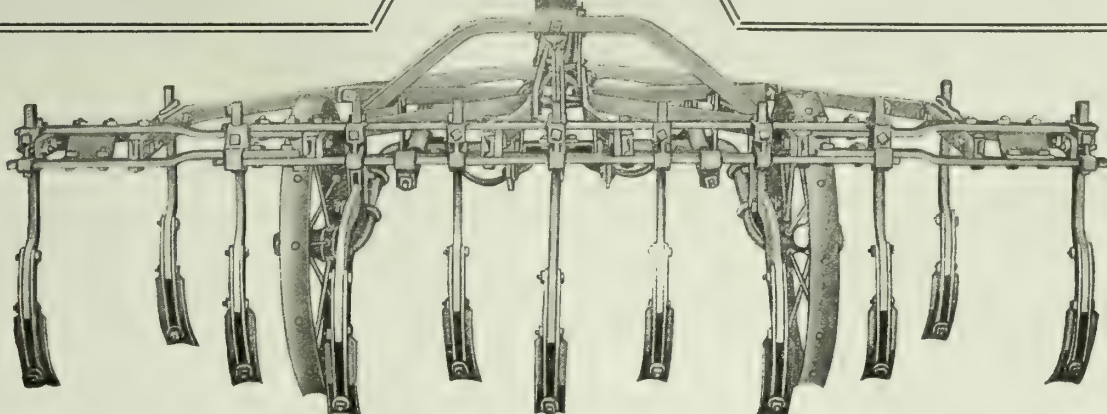
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New Orchard and Vineyard Cultivator

High Carbon Steel Construction
Easy Hand and Foot Lift
Hot Riveted Frame

Even Penetration in All Soils
No Neck Weight
Light Draft



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THREE SIZES: 7 Shovels 50-in. Cut; 9 Shovels 64-in. Cut; 11 Shovels 80-in. cut. Post Card will Bring Folder B-2 Nicely Illustrated

JOHN DEERE PLOW COMPANY, San Francisco

Odds and Ends of Farm News.

Farmers in the vicinity of Galt have organized themselves into a society called the Farmers' Alliance, by which they hope to buy and sell goods direct. B. S. Southworth has been elected president. About 60 farmers are said to have joined and a store will be started soon.

Dean Hunt of the University of California is scheduled to address the Madera Chamber of Commerce January 22. A number of other organizations interested in agriculture will join in holding the meeting.

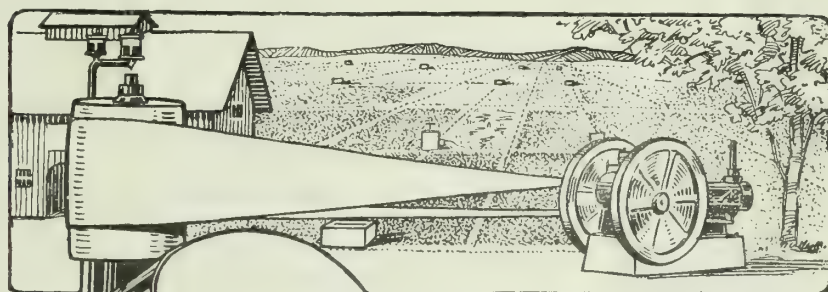
Water has been struck on the Horan ranch north of Germantown, Glenn county, at a depth of 420 feet. It rises to the surface and is in abundant supply.

A flow of 26 inches of water has been developed on the Nat Goodwin ranch in the San Jacinto Valley, Riverside county, by a tunnel run 320 feet into the foothills. The water is to be used for fruit and alfalfa.

The name of the Sacramento Valley Development Association has been changed to the Sacramento Valley and Northern California Development Association, taking in other than Sacramento valley counties. E. S. Brown, secretary of the Santa Rosa Chamber of Commerce, has been chosen manager.

HALF CENTURY ENGLISH HOLLY IN CALIFORNIA.

One of the beauties of the spacious grounds about the Jacob Browning home in Alameda, which is remarkable for its rarity, is a tree of English holly, which was planted forty-five years ago and has radiated its glory in the form of the great bunches of red berries at this season for these many years past. Several other trees of smaller growth have been taken from the parent stem. Only a few attempts to grow the holly in this climate have been successful, but this stranger in a strange land has taken root as in its home land and has been the pride of the venerable owner of the old home in Grand street, which is one of the picturesque land marks of the city, and a delight to the passerby. The broad lawns and beautiful shrub-



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A GREATER WATER SUPPLY

—is obtainable where the System is installed. The Layne & Bowler patent screen eliminates all sand troubles, permits a greater inlet capacity and makes the well more lasting and durable than the ordinary screen. Decide now in favor of the Layne & Bowler System and insure yourself against a water shortage.

Write today for Catalog No. 25, which tells about the development of the Layne & Bowler System and the story of its many successful users. Let the World's largest Water Developers solve your pumping problems.

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READ-MILLER CO.

bery, which occupy the greater part of the block on Grand street between Santa Clara avenue and Lincoln avenue, and many of the trees and shrubs are of foreign importation. With the holly standing as a sentinel is a tall palm, which was planted at the same

time and is another ornament to the grounds in the center of which is the home, with its inviting verandas and hospitable atmosphere of other days, an appropriate setting for the white-haired owner, with her gracious cordiality, herself, a pioneer resident.

Getting Ready for the Spring Work.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

Did you ever stop to think what it means to live in a country where they commence at Christmas, or shortly after, to plan for spring? Last week I had a letter from a daughter in Idaho in which she says "Winter is setting in now in earnest so don't look for letters."

And pretty soon spring will be setting in—in earnest with us Californians and we won't have time to write letters. So we should make hay while the sun shines, and fix up all the chicken furniture we can so as to save buying.

If you are going to brood chicks with hens make some comfortable coops for the hen so that she will not suffer from heat or cold. Last season I made several in the form of an inverted V; put a floor in one half and make that end water tight, the other end can be inch mesh wire with earth for the floor. This coop gives the hen a chance to keep herself clean with a dust bath during the day time and keeps a dry place for the chicks at night. Of course the size can be governed by material at hand, or what one thinks is the right proportion. Mine were made a little over three feet long and half the length was a board floor and the other earth floor. It should be made high enough so that the hen has plenty of room to stand up; it is cruel to put hens in such small dinky coops that they can neither turn around nor clean themselves.

FREE RANGE VERSUS YARDED FOWLS.—This is a good time to make your choice as to letting the hens have range or yards. Range is good for some things, and I like to let mine have all they can of it while they have a chance, so at present nearly everything is running loose. But as far as keeping them on free range all the time goes I would not do it. There is not a shadow of doubt in my mind, that all chickens intended for breeding purposes should be raised on free range; it is the only way to maintain health that can be transmitted to their progeny. But in the matter of laying stock, when I want to get fertile eggs I much prefer to yard them. If fowls are well fed, well housed, and well supplied with fresh drinking water, grit and shell, with plenty of fresh air and exercise so that they are comfortable at all times, they will lay all the eggs that they are capable of laying, and the eggs will be fertile, not only that, but I will know where to find them. That is a great point in yarding fowls, you know where to find the eggs, and you know fairly well whether that egg is composed of material such as you would care to eat in the raw. I have been at places where the folks would have had to offer a pretty stiff bribe to induce me to eat an egg.

FEEDING YARDED FOWLS.—A great many people have the idea that because they turn their poultry out on range they are saving feed, and that if these same hens were yarded they would have to feed so much more that it would eat up the profit. Now there is no sense in such reasoning, if it can be called reasoning. If the hens are turned out on a good range where they can get plenty of green feed and some insect life, then if they are fed some

grain night and morning they are being what I call well fed. But if they are merely turned out to stand around in groups out of the cold or wind, why they might be yarded to better advantage to themselves and their owner.

Yarded fowls should always have some litter in which their grain feed is served to them and if they are made to scratch for their grain they are much better employed than in standing huddled up in a heap. To be well fed does not mean that hens should be stuffed, it's time enough to stuff them when they are put in the oven. But they should be fed enough, of a variety of good sound feed to support the hen's needs and leave a surplus for the egg a hen is supposed to lay, but often times can't because she has but had given her what her own system demands.

This always is taken first, the law of nature attends to that, and that is why so many people ask "what is the matter with my hens, they look good but they don't lay?" The feeder stopped just short at the dividing line, and failed to furnish the surplus, which should go for the egg. And it requires very nice judgment to feed just right, and when the flock is a mixed one either in breeds or pullets and hens it is harder still, and you just have to guess.

I have a neighbor that says he feeds at night all his hens will eat and just as long as just one hen picks up wheat he throws it down. He has R. I. Reds and White Orpingtons, and there is no use talking, that man has gotten more eggs than anyone I can hear of in this locality. This is because his hens are near the same age and both breeds require about the same quantity of feed to do well. If there is a slow feeder or several of them in his flock, they do not have to take pot luck, as many would, but he stands and watches them feed, so knows why they, the laggards, need more.

Of course the man with a great number of fowls to feed can't stop to watch that every hen gets her fill once a day, but it pays. A hen that lays three or four eggs even in winter is working hard and needs to be fed.

HOW TO BUILD AN IDEAL INCUBATOR HOUSE.—If you are going to hatch any amount of incubator chicks it will pay a big dividend to build an incubator house right at the start. And this is the time to build so as to have it ready for the season's work. The most perfect incubator house I can imagine would be to build in a side hill facing east or west. Very few of us, however, are blessed with such a location, so we have to do the best thing under the conditions we have at command.

The size of course must be governed by the capacity of incubators you want to run, but it is always safe to build large enough. The walls should be of stone or cement and at least five feet high on all four sides. Put a window at the top, on at least two sides. If windows are hinged at the bottom they can be closed and opened from the inside. Put a window at each end near the peak of the roof, these are for ventilation, and in summer can be left open all the time. Throw dirt up to top of the wall on all but the south side which will be your way in and out. In very hot weather it might be

advisable to have double doors, but it will not be likely to be so cold as to need them to keep out cold. A house built on this plan will never smell of lamp oil or smoke, and if you do not need it at any time it can be turned into a milk house. I had just such a house in Dakota and in winter my stock of butter and all things that cold would not hurt was stored in that house until spring time. Small cheap windows can be used and a man can make the cement himself either in blocks, or by making a frame take one side of the building at one time.

SAN FRANCISCO POULTRY SHOW NOTES.

The attendance ran away ahead of all expectations, it being claimed that there were more paid admissions than at any other show held this year.

The sensation of the show was the winnings made by M. Duttern of Petaluma with his pens of White Leghorns. More points were scored with his entries than for any other, in fact there was little left for other breeders of that breed when he got through.

The meeting which was to have been held by the A. P. A. in connection with a committee from the Panama-Pacific Exposition was postponed, as several of those who had expected to attend were unable to arrive in time. It had been expected to discuss the coming big show at this meeting.

The Hopland Stock Farm had two pens of White Leghorns and one of White Rocks which had just arrived from the East entered at the show.

During the week Vincent Huntley of Petaluma gave a lecture on dressing, stuffing and de-boning fowls which proved very interesting and instructive to those in attendance.

Among those seen at the show almost every day was A. Schroeder of San Mateo, who had an entry of his White Leghorns on hand and was also busy telling of the merits of the San Mateo show.

That poultry raisers were in attendance in large numbers was shown by the fact that all of the supply houses who had booths did a good business and reported satisfactory sales.

Every one remarked at the arrangement of the show and in this respect the cleanliness of the pens and floor indicated that this is to be one of the features of the show in later years.

The judges were through with their work Wednesday and everyone seemed to think that they did their work honestly and well.

The work of the Association in getting out a program was much appreciated by all visitors attending, as it greatly simplified the task of looking up individual pens and owners.

The prize offered for the best cock in the show was awarded to C. J. Struby, proprietor of the Diablo Yards of White Rocks at Concord.

The display of pigeons and pet stock was considered high in quality and did much toward making the show the success that it was.

It was freely predicted that California birds are high enough in quality

to hold their own in the coming big show to be held in 1915. By the time another such show is held in San Francisco this quality should be enough

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better to make our winning at the big show absolutely certain.

With the exception of one day, the weather man was generous, making it possible for hundreds of visitors to attend who would not have been able to face the fierce winds and rains that prevailed earlier in the week.

The MacFarlane strain of White Leghorns were shown in a unique coop by the owner, W. C. MacFarlane.

The Peerless Poultry Yards of Santa Clara had a large number of entries of Anconas and Rhode Island Reds.

H. S. Harding, who was superintendent of the show, was on the job early and late and greatly assisted in giving out information to visitors.

Although the Dreamland Rink was well filled and would not have furnished room for many more entries, there were many breeders in the State who were not in attendance that should and very likely will attend in future years.

At the end of the show, breeders claimed that sales and attendance had been far in excess of what they had expected and everyone expected to come back next year with a much stronger showing.

The Porterville Poultry Show is scheduled to open January 10, and all signs point to a very successful affair.

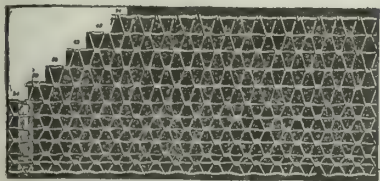


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The Poultry Outlook.

[Written for the PACIFIC RURAL PRESS
by A. W. ROBINSON.]

The promising outlook for a very successful and profitable year for the poultrymen of this state has induced not a few energetic persons, having faith in the future welfare of the industry, to make ample preparations for large hatches this winter and spring, with the object in view of enlarging their depleted flocks of laying hens. Several circumstances have combined, during the past twelve-month, to cause many a man esteeming himself poultry-wise, to curtail his flocks or to give up the business entirely. Chief among the discouragements that beset those who got cold feet, was the high price of poultry food and, for a good portion of the time mentioned, the low prevailing price of eggs in the open market.

Notwithstanding the lowering of the tariff on foreign eggs, which, taken advantage of by our Oriental neighbors, has caused the shipment to our shores of thousands of dozens of eggs, very satisfactory prices have ruled in the markets for some considerable time past. There will be a steady demand for poultry and poultry products in the larger cities and towns of the state for months to come, such demand certain of being augmented in the following year, when our great fair will draw to our state tens of thousands of egg eaters from all over the world. The poultryman who now makes due preparation for that coming eventful occasion will make no mistake. We are an egg eating people and the visitors we are expecting to entertain have like appetites.

The poultry business has seen many important changes during the onward march of the last decade or more. The almost universal method of incubation by the hen, has given way to the modern scientifically built hot air, or hot water incubator, made use of by many a farmer who has only small flocks, and by the specialist who, making a separate business of hatching chicks, brings to the front chicks by the thousand. In the progress of events many persons who a few years ago made use of incubators have discarded them, esteeming it more profitable to purchase baby chicks just from the incubator and caring for them by approved methods during their growing stage and until development into profitable layers.

During the next two or three months there will be placed in brooders, of many different patterns, countless numbers of little ones that will need, certainly during the first few weeks, great care in their management. Experience, a knowledge of proper care for satisfactory results, are needed to successfully finish the process of incubation, but when all that has been accomplished, the battle is not half finished. It behooves all those who shall place their chicks in brooders this winter and spring to use every precaution for the welfare of their young proteges. Good advice, condensed in a very few words might be, "See that the young birds are kept comfortable." This includes a suitable temperature and appropriate food in proper quantity. By all means avoid close confinement. No crowded quarters are to be thought of, neither foul, impure air. Very often the novice is very timid about giving the small tots an abundance of ventilation, and

serious losses are frequently chargeable to this extra, and unwise, precaution. Good judgment is requisite in every detail of poultry management. The absence of this has caused disheartening results not a few.

Hot air and hot water heated brooders have their advocates. By experience the poultryman masters the intricacies of brooding and the past-master of the art prosecutes his business quite unconcernedly. The non-heated brooder has many advocates, but its successful management requires far more care than is necessary in other makes. The use of roomy quarters, with one of the modern brooder stoves located in the center of the room, is admirable where a large number of chicks are cared for in a bunch.

The writer has found it far better to get the little chicks into the open air as soon as they may do so without danger of getting chilled. Even if the outside temperature is too low for a prolonged stay out of doors, a very few moments in the open yard, especially if the sun is shining, will give added life and vigor. Warmth and active exercise are secrets well worth the observing in caring for baby chicks. This, in conjunction with judicious feeding, will start the youngsters in good shape along the prolonged journey toward maturity.

Santa Cruz.

EGGS PRESERVED IN STERILE AIR.

Owing to the increasing price of eggs and the need of some safe method of preserving them, the report of M. F. Lescarde at the Third International Congress of Refrigeration describing a method of preserving eggs by refrigeration in sterile air becomes a matter of general interest. The eggs are placed on end in horizontal fillers made of pasteboard and wood; then these fillers are put into tin cases which can be hermetically sealed, each case having a capacity of six fillers containing 160 eggs. The covers of the filled cases are then soldered, and the cases are deposited in an autoclave (digester) which contains twelve cases of 960 eggs each. A vacuum is then made in the autoclave, and a duly proportioned mixture of two gases, carbon dioxide and nitrogen is injected. This process is very simple because carbon dioxide and nitrogen, in the form of compressed or liquefied gases, are on the market now, so that the manipulation of a few cocks and the reading of a gauge suffice to produce the proper mixture. The process in the autoclave having been completed, the cases are taken out, hermetically sealed and stored in cold-storage rooms at a temperature varying between 1 and 2 C. The chief advantages accruing from the preservation of eggs in sterile air are the following: (1) Waste, of such importance in ordinary cold storage, is completely eliminated. (2) The eggs retain a perfectly "fresh" flavor, and consequently they remain excellent for table use even after ten months' storage; they also retain their full weight, because no evaporation is possible in the tin cases. (3) After removal from the cold-storage room the eggs remain in perfect condition for a long time, and can be shipped long distances without deterioration; this constitutes a signal superiority over the ordinary cold-storage eggs, which deteriorate

rapidly after having been taken out of cold storage. The reason for this is simple; the antiseptic air which surrounds them for several months, together with the cold, absolutely destroys all bacteria which may be on the shell of the egg, or in its substance. Deterioration cannot set in except by reinfection, which is produced only by exposure to the air for several weeks. By reason of the above-mentioned advantages, eggs preserved in sterile air find a ready market, and command much higher prices in winter than ordinary cold-storage eggs, or even the so-called "fresh" imported eggs. The cost of treatment and preservation, according to the Journal of the American Medical Association, amount to 15 francs (3) per thousand.

PROGRESSIVE OSTRICHING.

A South African ostrich breeder who recently told officials of the Department of Agriculture that the United States is twenty-five years behind South Africa in ostrich raising has stirred the ambitions of agricultural experts in Washington.

The department has an employe in New York studying the question of selection and proper grading of the feathers, and later he will be sent to Arizona to study problems that have arisen there. Feathers from ostrich flocks in Arizona have sold for \$90 a pound.

Most of the ostriches in this country are in Arizona, and department officials believe there is a possibility of an extremely useful industry in American ostriches.

POULTRY PROSPECTS FOR 1914.

(Continued From Page 33.)

wishes to get the best.

Starting as it has before the Panama-Pacific Exposition in 1915, and having been such a huge success, the Association can justly feel that it has done a great deal both toward making the metropolis of the State a name as a center of well-bred poultry and in preparing the way for a poultry exhibit, in 1915, second to none ever held in the world.

Already those in charge of the poultry exhibit for this great show report that they expect the original estimate of 12,000 entries to be far lower than the actual count will show, and as an evidence of their statement they refer one to the widespread interest which is being manifested throughout the East.

An instance of the feeling in the East is shown in one of the illustrations, in another column, of a scene at one of the Eastern shows, where a prominent poultry breeder offered to wager at odds on his ability to win at the Panama-Pacific International Exposition in 1915.

With market conditions as promising as they have been for years, and with little fear of high feed prices, coupled with the opportunities being offered by breeders for better stock, there is every reason to suppose that general farmers who have poultry as a side line, as well as those who specialize with poultry, will have one of the most prosperous years in the history of the State.

The directors of the irrigation district of Imperial county have started preliminary work for the condemnation of the property of the California Development Company.

The Home Circle.

Old-Fashioned Valentine.

"O give to me some smallest sign
If thou wilt be my valentine."

Mrs. Barrows sat at an old-fashioned desk, an old-fashioned valentine in her hand. It was an affair of paper-lace, gilding, embossed flowers, etc. The verses that it contained were sentimental in the highest degree, ending with the lines quoted above.

The lady's lip curled as she read. Love was a word that no longer brought pleasant emotions to her heart. Her dreams of happiness in love had proved but dreams. Life was hard, commonplace, flat, without inspiration, without hope. So she pretended to herself. Deep down in her heart, much smothered and flouted there was yet a voice that now and then found utterance to this effect:

"If life is hopeless, joyless, it is your own fault to a certain extent."

As she sat gazing at the gorgeous valentine, the voice whispered: "You accuse your husband of change, coldness, broken promises. How is it with yourself? There are other promises than those made in words. What kind of a person was it to whom this valentine was written?"

What kind of a person? A sweet-faced, bright, breezy, laughing girl, clad in the prettiest of costumes, who would not for the world have allowed her lover to see her in negligee. Why should not the adoring "suitor" see her unbecomingly dressed? Why should he not see her hair in curl papers, her feet in ragged slippers? Why? Because his admiration would receive a check. He might cease altogether to be attracted. To please was then her chief object. If she felt listless when he came, she roused herself. If she felt cross, she controlled the disposition. If she felt dull, she hid the fact, bringing out all her resources to amuse.

Thus the voice in her heart. She knew that it was all true. These promises made to the eye, the heart, the mind of her lover, she had broken many times and oft. On his part, he had ceased to feel the old-time interest in her society, to pay the old-time attentions. He found other places more attractive than his home; other society more amusing than that of his wife. He followed his inclinations, the leadings of his nature, as she had followed hers. Neither had made it the business of their lives to overcome the faults that threatened the death of affection.

As Mrs. Barrows sat in silent introversion her husband came into the room unheard. He saw the open desk, the unloosed packet, the folded valentines, the open one in his wife's hand. An odd sensation made him breathe quickly as he went quietly out. The present seemed to recede. The past came back with wondrous vividness.

He had intended to speak to his wife on some unimportant domestic matter before going to business; but the sight of her lost in contemplation of the old valentine had restrained him. He went slowly down town, his thoughts, like his wife's, busy with those early days when she was his goddess and he her devotee. What if he should send her a valentine, as in the old days? He smiled a little at the thought. He had ceased to be "sentimental," as he called the old emotional experiences. Could he bring back those feelings? No, that would

be impossible, he thought. But might he not be truer to his duties without the impetus of feeling?

"I will go home tonight early," he resolved. "Kate must be very lonely many a time when I am at the club among friends, pictures, books." All day there hovered in his mental atmosphere an image of a graceful girl, gentle, bright, witty, who was the Kate Marsden of his early fascination. Yes, he called it a fascination, since, as he thought, the influence that she exerted over him had wholly disappeared.

Nevertheless, as his mind was more and more concentrated about the plan of surprising her with new devotion, some of the old eagerness for the evening home-going returned. At an earlier hour than usual he went to the market and bought a basket of fruit—pale Malaga grapes and golden oranges. A cluster of costly roses was selected—just such as "Kate" used to delight in, and with actually some of the lover's interest in what she would say, he hurried home.

As he approached his home, he saw that it was brilliantly illuminated.

"There must be company," he thought. "Mrs. Barrows is rather economical of gas as a usual thing. I wonder if sister and the children are here from New York? If they are, Kate will rebel, for she hates trouble, and has small favor for poor sister Mollie these latter days."

Mr. Barrows was very fond of his favorite sister's pretty flock of babies; five of them and the eldest but seven years old. The twin girls were his delight, and it was one of his private griefs that his wife did not take to those little people, or to children of any age or kind, as to that.

Thus reflecting, the husband entered the house and took off his overcoat in the hall. As he was hanging it on the rack, somebody opened the door leading into the parlor. It was a stately lady in a very charming tea gown of violet cashmere with silken trimmings, a cluster of white pinks at her corsage and another in the smooth black coils of her hair. He stared at her a moment in astonishment, she smiling, evidently amused at his perplexity.

"Kate!" he exclaimed at last. "Really, I didn't know you. How handsome you look!"

She slipped her arm into his, and together they went into the dining-room.

"I have brought you some roses," he said, almost timidly, "and I thought perhaps you would like some fruit."

"How good of you, James!" said the lady, burying her face in the lovely flowers. "And such roses are so expensive now! I love them all the better for their rarity—the beautiful, beautiful things!"

The husband was many times repaid for the gift by the pleasure she showed. The fruit was praised in its turn, and it was with genuine happiness that the two sat down to the tea table and chatted of the events of the day. Mr. Barrows stole many a glance at his handsome, vivacious wife. She had put on that pretty gown for him, she had arranged her hair for him. That was the style he admired—no frizzing, no curls, just those stately coils that became her so well.

"I thought perhaps there were guests in the house, you had lighted up so brightly!" said Mr. Barrows, presently.

"I remembered your fondness for

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having the rooms well lighted," replied Mr. Barrows; and as her husband looked fixedly at her, she actually blushed—yes, the self-contained matron, who believed herself to have outgrown all feeling, grew rosy under a look.

When tea was over the two strolled into the library, where a glowing fire in the open fireplace welcomed them.

"This is a pleasure indeed," said Mr. Barrows, who had missed the open fire sadly.

"Yes, I thought it a pity we had neglected it so long," said Mrs. Barrows. "It looked so cheery after Thomas lighted it. It is some trouble you know; makes a good deal of dust."

"All the kinder of you to undertake the trouble," responded the husband, gallantly.

"I saw this when I was down town today," she said. "These essays, you know, of Miss —'s that you enjoyed so much in the magazines. I thought it would be pleasant to re-read some of them together."

"I should enjoy it of all things," said the amazed husband, who had been accustomed to see his wife always absorbed in some occupation that shut him out.

So the table was drawn to the sparkling fire, the drop light was arranged, and Mr. Barrows read aloud from the brilliant pages, while his wife busied herself with a bit of embroidery.

This was a good beginning. But Mrs. Barrows saw that the cure must go deeper. She sat down and wrote

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a long letter to the "Sister Mollie" that her husband loved so well. There were some confessions in it, some explanation.

"You will help me, I know," she said, "when you understand the efforts we are both making. It will be rather troublesome to bring your brood, but as John is absent, you won't so much mind leaving home, and I will come and help you with the flitting. I have already told you that I wish you to leave little Mollie with us for a few months, till you come to us next summer at least. Think of this seriously. It will be such a help to us in reconstructing."

"Uncle James! Uncle James! We's come."

A little fairy in white ran down the walk shouting these words, as Mr. Barrows opened the gate one April morning.

The child was caught up and hugged and kissed till her soft cheeks tingled.

"We're all here," she said. "Mama says mebbe you will turn us out 'cause we didn't ask you if we might come. Will you turn us out, Uncle Dames?"

"All here? What do you mean, Mollie?"

"Why, us all. Mama and Neddie and me, and the twinnies, and tiny baby. Only papa is way off in California, you know."

"It's Kate's doings," thought the husband. "God bless her. She shall see that I will not be lacking in appreciation."

And he was not. The presence of "Mollie and the babies" brought a great wave of love into the house by which many sweet things were refreshed.

Talking the matter over with her sister one day, Mrs. Barrows said:

"Why do we forget that love, the tenderest of flowers, needs the most careful, the tenderest culture?"—Portland Transcript.

Making a Silk Lamp Shade.

The silk lamp shade must begin with the heavy wire frame. The tinsmith can make it after the following measurements: Four side wires, 10 inches long, three rings, 8 inches, 10 inches and 13 inches in diameter, and a center ring, 3 inches in diameter, fastened to the upper ring by wires 4 inches long to bring it below the upper ring. This inside ring rests on the chimney of the oil lamp and on the fixture of a gas or electric lamp.

Wind all the wires with white tape except the inside ring and the wires connecting it to the frame. Have one and one-half yards of either Jap or China silk in a plain green or gold, and taking the whole piece of silk, pin it in plaits to the upper and lower rings of the frame. Leave enough at the top to turn under when all the plaits are pinned in place. Cut off the extra silk, leaving enough at the lower edge for a turning. With a needle and thread catch the plaits down on the inside of the shade with a running stitch close to the wire. Remove the pins as you work. When both edges are sewed, take the remaining silk and pin at the lower edge and even in the fullness at the top in tiny plaits. Turn in the silk on the wrong side and slip-stitch in place.

A narrow finishing braid or furniture braid may be placed and caught in place at the top and silk or bead fringe may be used to finish the lower edge. A double ruffle of the silk may be substituted at the lower edge for finish, and in this case two yards of the material will be needed. This shade should not cost more than three dollars and retails at the stores at from \$10 to \$25, depending on the size and finish.—Florence A. Barlow.

Altruistic.

Rose—He said he would kiss me or die in the attempt.

Marie—Well?

Rose—He has no life insurance, and I pitied his poor old mother.—Ohio State Sun-Diel.

Steered.

Kitty—Oh, Ethel, Jack has finally proposed. I knew he would.

Ethel—Why you said you thought he had no intention whatever of proposing.

Kitty—Well, he didn't have.

A young minister had gone to the home of his boyhood to preach. At the close of the service one of the deacons engaged the young preacher's wife in conversation. "It was a strange coincidence," said he, "that your husband's text was the one from which his father preached his last sermon in this pulpit." "Indeed," said the lady, "that was strange. I hope," she continued, brightly, "that it was not the same sermon." "Oh, no," said the deacon, earnestly, "his father was a very smart man."—Watchman.

Don't Do That.

Never fail to keep an appointment.

Never delay in answering letters or returning books.

Never inconvenience people by coming in late at church, theater, lecture, or concert.

Never stop people who are hurrying along the street and detain them for ten or twenty minutes.

Never call on people just at bedtime or during dinner, or before they are downstairs in the morning.

Never, when you see two people engaged in earnest talk, step in and enter upon a miscellaneous conversation.

Never speak disrespectfully of your parents, nor of your sisters. People may laugh at your wit, but they will despise you for it.

Never talk when others are singing or doing anything else for your amusement, and never, the instant they have finished, begin to talk upon a different topic.

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50,000 apple trees on rented ground; must sell; order now at half price. Full Value Nursery, Petaluma, Cal.

Tact.

The president of a small college was visiting the little town that had been his former home and had been asked to address an audience of his former neighbors. In order to assure them that his career had not caused him to put on airs, he began his address thus:

"My dear friends: I won't call you ladies and gentlemen—I know you too well to say that."—Ladies' Home Journal.

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WANTED improved farms and wild lands. Best system for quick results. Full particulars and magazine free. Don't pay big commissions. Western Sales Agency, Minneapolis, Minn.

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Home Economics.

The Wind as Electric Power.

[By the ASSOCIATE EDITOR.]

A young man in North Dakota has succeeded in fixing up a windmill so that it will provide all of the electric power needed on a large farm. This is described in a bulletin of the North Dakota Agricultural College. This opens one of the brightest opportunities for the betterment of the farm home that has developed. People who are connected up with electric power lines or can easily do so, do not need to bother with a windmill generator. Others might prefer to have a gas engine generate their electricity. Others yet, if they live where there is a fair supply of wind, can have all the comforts and conveniences of an abundant supply of electricity at very little expense other than initial cost. It is particularly a help to the home, though a large amount of power can be used in strictly farm operations also. It is wonderful how much power a windmill can generate.

LOTS OF POWER.—Of the capacity of such a windmill as a source of power the author of the bulletin, Wallace Manikowske, on whose home ranch the windmill in question was used, says:

"A well designed equipment, together with a 14 or 16-foot windmill, will generate enough electricity to charge a storage battery. By this means current can be used to do the pumping, washing, churning, to separate the milk, and to light a house of sufficient size to accommodate 15 persons and light all stables and outbuildings necessary for a farm of 1200 acres or more. With a storage battery, it is possible to accumulate a supply of electricity sufficient to extend over periods of atmospheric quiet of from two to 10 days' duration, depending upon the size of the storage battery. During periods when the wind blows continuously, as it frequently does in the central states, electricity can be used for ironing, cooking, and many other purposes too numerous to mention. Such a power plant will cost but very little more than a gasoline engine electric lighting and power outfit of a similar capacity." The plant he helped develop has done just this, he states, for two years.

It can be said that every bit of equipment needed can be secured from an electric supply company and that there are no patents to bother about or anything like that. Such a plant any handy person with a knowledge of electric equipment can install.

ELECTRIC LIGHTS.—The mere advantages of lights is enough to make any woman want electricity in the house. The bulletin states: "Have the farmers ever stopped to consider how much time is actually devoted to keeping the lamps and lanterns in shape? Supposing it takes but two hours per week to wash chimneys, trim wicks, and keep all lamps and lanterns well supplied with oil; in a year the total number of hours would amount to 104—13 days of eight hours each. This would afford an additional two week's vacation every year to our housewives, and would mean a much more enjoyable life for them." This is only one of the advantages of having electricity in the house.

Of course a person need not install a windmill power generator if he has

power from another source, but when no power line is around, the windmill will do the business.

DIFFICULTIES OVERCOME.—Heretofore there has been a number of great difficulties in getting suitable windmill power generators, but these difficulties have been overcome in ways described in the bulletin which are too technical and involved to describe here, though quite surely the Agricultural College at Fargo, N. D., would send a copy of the bulletin on request of a farmer who intended, if feasible, to install one.

A big difficulty has been the irregularity of the power, for sometimes the wind blows strong and gives lots of power, sometimes mildly and gives little, and sometimes not at all and no power at all. Furthermore, no matter how fast the mill moves, the wheel transmitting the power to the generator must move at uniform speed. This is easy with water, steam, or gasoline engine, which supplies power evenly and smoothly, but a wabby thing like the wind is different. A device was, however, arranged so that the speed would be uniform though the load put on the generator would be variable.

The apparatus was arranged so that power developed is used directly if the mill and lights are running at the same time, or if not used, it goes to storage battery to be used later. If not enough is being generated for use, the deficiency is made up from the batteries, and if more is developed than is being used, the surplus goes to the battery. How all this is done is told in the bulletin.

WINDS AND THE MILLS.—The stronger the wind the more power it stores by a big margin, as in a ten mile an hour wind a 16-foot mill must run 10 hours to store up enough electricity to light ten 16-candle power lights for five hours. However, with a 20 mile wind it will do so in an hour and a half and in a 25-mile wind in 54 minutes. It is stated that, "A good wind velocity (20 miles per hour) must be at hand at least on an average of six hours during every week." Over lots of California we can do much better than that and so be better fixed than the owners of the power plant described.

Gasoline outfits have reached a high stage of excellence as sources of light and power (for washing machines, ironing, and such things) and have been very popular. The author claims that the initial cost of gasoline and wind outfits are practically the same, but naturally he favors the windmill. He claims that taking interest on investment, upkeep, cost of operation, labor and all, into consideration that the cost of a kilowatt (the standard of measurement or value in electricity) is 5 cents by wind power and 14.3 cents by gasoline engine. Sold at 15 cents per kilowatt, there would be 31.2 per cent net interest on investment in the windmill and 2.2 per cent on the engine. He claims that no source of electric power is cheaper, except running water. That is found only in the mountains; the wind is free for all.

Electricity from a power company in California is still cheaper than wind power unless we rule out cost of equipment in the first place, for the cost of developing electricity after the wind powerplant is installed is very small.

COST OF PLANT.—From a table used in calculating we judge that the windmill, including governing pulley (connecting with generator), will cost \$200, dynamo \$110, storage battery \$550, switchboard \$150. Depreciation of battery is \$66 per year and the total cost

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of generation \$171.25. However, if sold at 15 cents per kilowatt, it would return \$497.38, and it should be remembered that a remarkably large amount of electricity was used, several times as much as would be needed in an ordinary home. A smaller and less expensive plant could quite evidently be used, or the power shared among many families. The calculations were based on North Dakota conditions, and more electricity would be developed with more and steadier winds.

Power from power companies is cheaper and better where available, if much is used, but where there is lots of wind it gives an excellent opportunity to lift a big burden of house work at moderate cost.

The author writes, and this applies whatever the source of electric power: "After the plant is once installed, the farm will become a place of social relaxation and will serve as a summer resort as well as a place of business. It will be possible to have an abundance of light throughout the house. Electricity can be made to do the pumping to supply water for the heating tank or for any other place; electric fans would lessen the extreme warmth of the summer.

"The housewife's labor will be lessened very materially by the use of a bread mixer, potato peeler, dish washer, and by electric stoves, hot plates, hot pads, water and milk heaters, curling irons, massage machines, hair driers, coffee percolators, chafing dishes, and vacuum cleaners.

"Probably the housewife would next consider the laundry equipment the most important. There is no other source of energy so adapted to laundry work as is electricity. The drudgery of the wash day is done away with when one is not compelled to turn a washing machine. The mangle and electric flat iron are great labor saving devices. No woman who has used these advantages can be induced to give them up."

Our Young Folks

The Turkey's Nest.

One day the old turkey hen went out to find a place to make her nest. She went a long way, and she took a long time to find it; but, when at last she had suited herself, she said,—

"They may go to the East and go to the West,

But they'll never be able to find my nest."

And she felt so proud of herself that she walked all the way home with her head in the air.

When she got home to the barnyard, her friends were talking about her. There were the gray goose and the white duck and the brown hen; and, when they saw her coming, they called, "Where did you make your nest?"

"Guess," said the turkey hen, and then they were puzzled.

"Well," said the gray goose at last, "when I go to make my nest, I always try to get near the water, for there's nothing so good for my health, so I'll guess the goose pond."

"Right," cried the duck. "I'll quite agree. The pond is just the place."

"The idea," said the brown hen, chuckling to herself; "why, what could be healthier than hay or straw? I'll guess the haystack."

"But, though they did their very best, They never could guess where she made her nest."

The turkey hen grew prouder and

prouder, and she walked about the barnyard like a queen. One day the cook saw her, and said to the children, "Certain and sure that old turkey hen has made herself a nest."

"Then I'll find it," said Cousin Pen, who had come to visit on the farm.

"Then I'll find it," cried Brother Fred. "She can't hide a nest from me."

"Then I'll find it," said little Ben. And they all started out to look for it.

Cousin Pen went down in the hollow and looked in the grasses and leaves; and in the stumps and hollow trees.

"But, though he did his very best, He couldn't find the turkey's nest."

Brother Fred went up the hill to the gin-house, and down in the cotton field, and round by the goose pond, where he found the goose and the duck taking a swim.

"But, though he did his very best, He couldn't find the turkey's nest."

Little Ben began at home to look. He looked under the house and behind the woodpile and in the barn and out by the haystack; and, while he was tipping about out there, he frightened the brown hen from her nest, and she quarrelled half the day about it.

"But, though he did his very best,

He couldn't find the turkey's nest."

Then mamma said she must go and look. So she put on her bonnet and went to the wood-lot, and sat down under a tree just as quiet as she could be. By and by the turkey hen came along. She saw mamma and mamma saw her, but neither of them said a word. The turkey hen walked round and round in the wood-lot just as if she wasn't thinking about anything, but at last she went through the big gate into the road.

Then mamma got up and followed her, just as still as a mouse; and the turkey hen

"Went up the hill and down the hill, And through the fields and by the mill,

And down across the meadow brook, by many a turn and many a crook;

She went to the east and she went to the west

But she never went near her hidden nest."

"I'll give up," said mamma, and the old turkey hen was prouder than ever.

Then papa said that he must try; and early one morning, before the children were awake, he got up and started out to find the turkey's nest.

"He'll find it if anybody can," said Brother Fred when he was told, and the children could scarcely wait.

He stayed so long that they went down the lane to meet him; and, when he saw them coming, he called out,—

"I declare I've done my very best, But I can't find that turkey's nest."

The turkey hen grew prouder and prouder. She stayed at her nest, wherever it was, nearly all the time then, and came to the barnyard only when she wanted something to eat.

The gray goose and the white duck and the brown hen said they wouldn't be surprised at anything she did. But they were surprised, and so were the children, when one morning she walked into the yard with twelve little turkeys, as fine as you please, walking behind her.

"Just look here," she said, "at my children. I hatched them all out in my nest down in the corner of the old rail fence." And she added, as they gathered to see,

"I tell you what, I did my best, When I found that place to make my nest."—*The Advance.*



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Two Faithful Friends.

In far-off Switzerland I saw the statue of a faithful friend. Long ago it was placed in this village church, and hundreds of years from today it will still be there to tell the truthful story.

The town of Zug is near the great St. Gothard, with its peaks all covered with shining ice and heavy banks of snow. Sometimes the sunshine melts them a little, and then great masses go sliding down the mountain side, covering everything in their path.

In the year 1628 the young governor of the province was riding over the St. Gothard, and with him were his favorite servant and his pet dog. Right at the top of the pass a swift avalanche came crushing, pouring down, and governor, servant, and dog were in an instant buried beneath it.

The dog was the first to shake off the terrible load. He barked and howled and moaned, but could not find his master.

After awhile he seemed to understand that something had happened to his beloved master, and, with a loud bark, he turned and hurried back to the little inn that he had seen as they passed it in the morning. His whines and howls and nervous calls and scratching made the people know that some accident had occurred, and, snatching up pickaxes and snow shovels, they followed him.

When they reached the place, the faithful dog stopped suddenly, plunged his face in the snow, and began to scratch it up, all the while whining and barking. The men set to work at once, found the poor governor, and dragged him out, and after more work they rescued the servant. The men were barely alive. They had heard the howling and barking of the dog, noticed his departure, and given up all hope.

The faithful dog almost died from joy when he saw his master's face again, and the grateful master resolved that his dog should never be forgotten.

He sent for a great artist, and told him to make a beautiful statue, that all the world might know the faithfulness of the dog and the gratitude of the man. There I saw it in the little church at Zug—the marble tomb of the governor, with his beloved dog resting at his feet.—*The Olive Leaf.*

Little four-year-old Harold met with a very serious accident, having both a broken arm and a broken leg in consequence. When he was able to talk, his father questioned him as to how it happened. "Oh," he said, "I went upstairs, and there was a window open. I looked out, then I hollered out, and then I jest followed the holler."

Never tell long stories of which you yourself are the hero.

THE MARKETS

San Francisco, Jan. 7, 1914.

Cereals.

WHEAT.

The holiday dullness has not yet disappeared from this market, and there is no business of any consequence under way in either spot or future grain. What little trading is done is at the old figures, and desirable milling grades are firmly held.

California Club, ctl....	\$1.52½	@1.55
Forty-fold	1.55	@1.57½
Northern Club	1.52½	@1.55
Northern Bluestem ...	1.70	@1.75
Northern Red	1.55	@1.70

BARLEY.

Buyers appear to be taking no interest at present, and the movement is very light, as for some weeks past. A little easier feeling is reported, although holders do not appear in any hurry to sell.

Brewing and Shipping...	\$1.37½	@1.42½
Choice Feed, per ctl...	1.30	@1.32½
Common Feed	1.25	@1.27½

OATS.

Prices remain fairly steady at the old level, but are little more than nominal at the moment, as there has been very little business for the last few days.

Red Feed	\$1.65	@1.85
Seed	2.10	@2.30
Gray	Nominal	
White	1.45	@1.50
Black Seed	2.50	@3.00

CORN.

The only change is an advance in Egyptian, but the movement in all lines is limited locally. A drop is reported in the East, but has not affected this market to an appreciable extent.

California Yellow	Nominal	
Eastern Yellow	\$1.85	@1.90
Eastern White	Nominal	
Egyptian	1.70	@1.75
Kaffir	Nominal	

RYE.

There has not been enough business of late to establish values very definitely, but some stock is offered within the range quoted.

Rye, per ctl.....	\$1.45	@1.50
Seed	1.65	@1.70

BEANS.

So far nothing new has developed in the local bean market, and prices show no change whatever since last week. Buyers appear to be still pretty well supplied from their fall purchases, and the shipping movement is accordingly very light. It is not believed that there will be any return of activity for several weeks, at least, and probably not until spring, and there is nothing to indicate any further change in price. Stocks of most varieties are moderate, and prices are firmly maintained.

(On wharf.)

Bayos, per ctl.....	\$4.90	@5.00
Blackeyes	4.25	@4.35
Cranberry Beans	4.00	@4.25
Horse Beans	1.90	@2.15
Small Whites	4.75	@5.00
Large Whites	3.30	@3.40
Limas	5.00	@5.10
Pea	Nominal	
Pink	3.00	@3.25
Red Kidneys	4.50	@5.00
Mexican Red	3.75	@4.00

SEEDS.

There is a little more demand in a small way than for the last few weeks, but no large movement has started, and prices are unchanged.

Alfalfa	12½	@15 c
Broomcorn seed, per ton...	Nominal	
Brown Mustard, per lb....	3½c	
Canary	7	@7½c
Hemp	2½	@3 c
Millet	2½	@2½c
Timothy	7½	@8 c
Yellow Mustard	Nominal	

FLOUR.

Values are firmly held at the same figures as for some time past. Buying is on a little larger scale than for the last few weeks, but otherwise the market is without special feature.

Cal. Family Extras ...	\$5.60	@6.00
Bakers' Extras	4.65	@5.20

Superfine	3.90	@4.10
Oregon and Washington		4.90

Hay and Feedstuffs.

HAY.

The local market remains in very poor shape, and prices have been marked down a little all around, as it has been impossible to clean up the arrivals at the old figures. The amount coming in is even smaller than before, but so far, in spite of reports of depleted stocks, local buyers have shown no disposition to get into the market. The limited demand is due partly to the recent unfavorable weather, and partly to the hope on the part of buyers of still further concessions, and the dullness is increased by the firm attitude of holders in the country, few of whom are willing to accept the prices obtainable here. There should be some improvement in the local demand, but there is nothing to indicate any prospect of a heavy movement. The recent rains have put most of the hay districts in fine shape for the new crop.

No. 1 Wheat, or Wheat and Oats	\$14.50	@15.50
do No. 2	12.00	@14.00
Lower grades	9.00	@11.50
Tame Oats	12.00	@16.00
Wild Oats	10.00	@13.00
Alfalfa	9.00	@13.50
Stock Hay	7.00	@9.00
Straw, per bale	65	@90c

FEEDSTUFFS.

All prices are held at the former level, and there is no perceptible change in conditions, the demand in most quarters being rather light.

Alfalfa Meal, per ton....	\$18.00	@19.00
Bran, per ton	24.00	@25.00
Oilcake Meal	34.00	@35.00
Cocoanut Cake or Meal...	28.00	@29.00
Cracked Corn	42.00	@43.00
Middlings	33.00	@34.00
Rollod Barley	28.00	@29.00
Rollod Oats	32.00	@33.00
Shorts	26.00	@27.00

Garden Truck.

VEGETABLES.

The demand has been rather light most of the week, with weather conditions unfavorable for active trading, and as a good deal of the stock received is not very attractive as to quality, prices are somewhat lower in several lines. While offerings of asparagus have been hardly worth mentioning, an early crop is expected in the river district, and rhubarb is in fairly good supply for this season. Cabbage and cauliflower are still rather scarce and high, and southern cucumbers are a little stronger. Beans and peas are arriving in poor condition, and peas in particular are lower. Prices have also been marked down a little on southern tomatoes and eggplant. Mushrooms are offered in excessive quantities and move off slowly at lower prices. Celery is unchanged, with supplies about even with the demand, while lettuce is offered more freely.

Cabbage, per ctl.....	\$1.25	@1.50
Cauliflower, dozen	60	@70c
Cucumbers, Southern, box.	75c	@1.00
Green Peppers, lb.....	3	@3½c
Carrots, per sack.....	50	@65c
Green Peas, Southern, lb.	3	@10c
String Beans, lb.....	5	@10c
Summer Squash, lug box.	1.00	@1.50
Tomatoes, Southern, crate	35c	@1.00
Eggplant, lb.	3	@5c
Sprouts, lb.	4	@5c
Celery, large, crate.....	1.50	@2.00
Rhubarb, box	1.00	@1.75
Lettuce, crate	1.25	@1.75
Mushrooms, lb.	4	@28c
Asparagus, lb.	Nominal	

POTATOES, ONIONS, ETC.

Fancy river potatoes have again been advanced a little, but the market shows little strength, the demand being light. Oregon goods show quite a sharp advance, with limited offerings, and the best sweets are also higher. Oregon onions have been advanced, but local stock is moving off slowly at the old figures.

Potatoes:		
New River Whites	75c	@\$1.35
Sweet Potatoes, per ctl...	\$1.25	@1.60
Oregon Burbanks	1.20	@1.40
Onions: Yellow River, ctl.	2.20	@2.35

Oregon	2.60	@2.75
Garlic, per lb.....	7	@10c

Dairy Produce.

POULTRY.

Offerings of Eastern stock have been moderate this week, and while local stock is coming in fairly well, the market shows considerable firmness all around. Small hens and young roosters are higher, and other lines of chickens are well maintained. Squabs also are higher. Arrivals of dressed turkeys are light, and prices are held at a satisfactory level, extra fancy stock selling up to 30c. Shippers of scrub turkeys, however, cannot expect to get the ruling price, and some offerings are forced out as low as 20c.

Large Broilers	23	@24 c
Small Broilers, per lb....	27	@28 c
Fryers, per lb.....	20	@22 c
Hens, extra, per lb.....	18	@20 c
Hens, large, per lb.....	18	@20 c
Small Hens, per lb.....	18	@19 c
Old Roosters, per lb....	14	@15 c
Young Roosters, per lb...	19	@20 c
Squabs, per doz.....	\$2.00	@2.25
Geese, per pair.....	2.00	@3.00
Ducks, doz.....	4.50	@8.00
Turkeys, live, per lb....	20	@21 c
do dressed, choice....	26	@28 c

BUTTER.

Prices have varied within very narrow limits from day to day, keeping on about the same general level as last week, and are now slightly lower than a year ago. Foreign stock is coming in at frequent intervals, and seems to be readily absorbed, but seems to have caused no great disturbance in the market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30½	31	30½	31½	31½	31½
Firsts	29	29½	29½	29	29	29

EGGS.

The unusual feature of the week was a drop of 10c in extras in one day from the high level reached last week, which was apparently not justified by conditions. Supplies are still light, however, and prices have again taken an upward turn, though buyers are slow to meet the advances. Quite a lot of Chinese eggs came in this week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	52	42	44	44	45	
Selected						
Pullets.....	45	41	41	42	43½	

CHEESE.

Offerings are a little larger this week, and both flats and Y. A.'s are ½c lower.

Fancy California Flats, per lb...	18 c
New Young Americas, fancy....	16½c

Deciduous Fruits.

Business is now limited almost entirely to apples, as pears are about cleaned up, and strawberry shipments have been interrupted. No quotable change has occurred in prices, but fancy offerings have been moving more readily at the top figures, and all desirable stock is firmly held, as supplies are gradually decreasing. Ordinary apples, however, move rather slowly.

Strawberries, chest	Nominal	
Apples: Baldwins	\$1.10	@1.50
Spitzenbergs	1.25	@1.75
Greenings	1.00	@1.35
Bellefleur	1.25	@1.75
Newtown Pippins	1.25	@1.75
Pears: Winter Nells	1.75	@2.25

Dried Fruits.

The dried fruit market locally is almost entirely without feature, as business continues extremely dull, and the trade in consuming markets still shows no disposition to buy. No real activity is expected for some time to come, and the local packers are practically marking time, showing no disposition to increase their stocks in lines of which any large quantity is obtainable. Some lines, apricots in particular, are so closely cleaned up that the figures are little more than nominal; while prunes are scarce and closely held, and packers are not willing to make any advance on general offerings. Peaches are neglected, both here and in outside markets, and it is estimated by Fresno packers that

growers have still about 3000 tons. A much better Eastern demand is expected shortly, however, and the formation of a growers' association may bring some improvement. Raisins are moving off slowly but steadily, and seem to be in a fairly strong position. The New York Journal of Commerce says:

"The distributing trade in the East seems to be entirely out of harmony with the policy of the Associated Raisin Co. in the methods it is pursuing in its effort to profitably market the 1913 crop of California raisins and the carryover from 1912. Under these conditions local jobbers are placing no orders for shipment from the Coast and seem to be making no effort to push the goods into channels of consumption.

"Owing to the scarcity and relatively high cost of evaporated apples, holders of California peaches here and on the Coast are looking for a decided increase in the demand for the latter when trade starts up after the new year is fairly under way, as it is the cheapest dried fruit now on the market. Apricots remain quiet but firm.

"California prunes in the larger sizes seem to be wanted, but owing to the small offerings and hesitancy of buyers to meet sellers' views little business results. Stocks on the Coast of 30s and 40s are said to be light and in few hands. The latest f.o.b. four-size bulk quotations were 6½c on 30s and 6¼c on 40s, though on assortments in 40s to 60s 6¼c and possibly less might be done. Spot trade in prunes and other Coast dried fruits is confined within narrow limits as usual at this season, but there is no pressure to sell from store, and prices are held firmly."

Evap. Apples, 1913	6½	@8 c
Apricots, 1913	10	@13 c
Figs: White	3	@4½c
Black	2½	@3½c
Calimyrna		4½c
Prunes, 4-size basis	5	@6 c
Peaches	4	@4½c
Pears	6	@7 c
Raisins (in sweatbox):		
Loose Muscatels	4	@c
Thompson Seedless	4½	@c
Seedless Sultanias	4½	@c

Citrus Fruits.

The shipping season for oranges from southern California has opened in earnest this week. Large size fruit is in demand and reports from various sections state the quality to be very good. Pomona reports that the crop in that locality promises to be nearly up to the normal. In most other centers the orange crop will, it is predicted, be nearly up to that of 1911-12.

On the Eastern auctions last Monday, January 5th, prices were very good, averaging \$3.15 per box for a car of navels from Lemon Cove, down to \$1.65 per box for a car from Lindsay. The average sales were around \$2.60 per box for the fourteen cars sold that day at New York.

On the same date at Pittsburgh, the prices were considerably lower—the highest being \$2.15 and the lowest \$1.60 per box, for navels. Other auction points varied between these prices.

At the Los Angeles auction the same day, navels averaged from \$1.60 down to \$1.10 per box for the six cars sold. Lemons are selling for about \$4 per box.

Total shipments of oranges from California for the season to Jan. 5th were 5,319 cars.

Navels	\$1.25	@2.50
Tangerines, crate	1.00	@1.50
Mandarin	1.25	@1.50
Grapefruit, seedless	2.00	@3.00
Lemons	1.75	@4.50
Limes	3.50	@4.50

Nuts, Honey, Hops, Etc.

NUTS.

While business is confined to narrow limits, as usual at this season, desirable offerings are very closely held and values are firm. French walnuts are said to be about cleaned up, and some Oriental stock, which has been put on the market, is of poor quality and finds little demand. There is practically nothing in grow-

ers' hands, and prices are nominally as before.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15½c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

There is practically no demand at present, and a somewhat easier feeling is reported as to values, as some holders here have had difficulty in effecting sales.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @9 c
Amber	6½ @7 c
Off Grades	5 @6 c

BEEWAX.

Beeswax is little more than nominal, as there is little here, and there has been no important inquiry of late.

Light	30 @31 c
Dark	25 @27 c

HOPS.

Supplies are said to be scarce in the East, and a somewhat stronger demand is reported in Pacific Coast markets, though little business has been done so far. The remaining supply in growers' hands is pretty firmly held at an advance, which buyers are not yet ready to meet.

1913 crop	20 @22 c
1914 crop	15 @17 c

Live Stock.

While hogs are still coming in fairly well, other classes of stock remain firm, with very moderate arrivals and no anxiety to sell on the part of growers.

Steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼ @ 6½c
No. 2	5¾ @ 6 c
Bulls and Stags	2½ @ 5 c
Calves: Light	7½ @ 7¾c
Medium	7 @ 7½c
Heavy	5½ @ 6½c
Hogs: Grain-fed, heavy	7¾c
150 to 250 lbs.	8¼c
100 to 150 lbs.	8 c
Prime Wethers	4½ @ 5 c
Ewes	3¾ @ 4¼c
Lambs: Suckling	6 @ 6½c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11½ @12 c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½ @ 9½c
Suckling Lambs	12½ @13 c
Dressed Hogs	13½ @14 c

HIDES.

Heavy Steers, over 56 lbs	15½c
Medium	15 c
Light Steers, under 48 lbs	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	\$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

WOOL.

Quite a lot of wool is now passing through this port from Australia, and still larger shipments are expected. California wool remains dull and nominal, with no prospect of activity for a couple of months.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HORSES.

Some desirable older stock has come in since the holidays, and quite a number of horses of various degrees of desirability have been put up at auction. The number of really attractive animals, however, has not

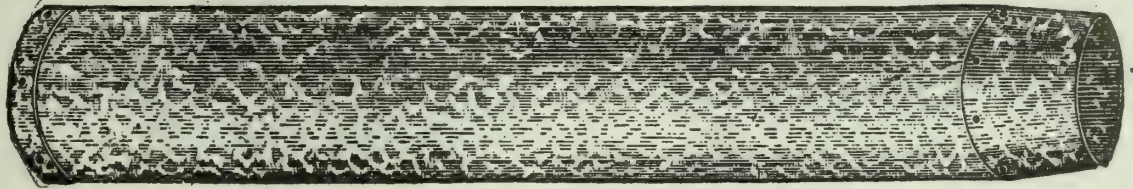
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been large, and while the offerings have sold fairly well, buyers do not seem to be taking any great interest at present.

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Chunks, 1350 to 1500	150 @200
Wagon Horses, 1250 to 1350	100 @150
Delivery Horses, 1050 to 1250	100 @125
Desirable Farm Mares	75 @100

MULES.

1200 lbs.	\$200 @250
1100 lbs.	150 @200
1000 lbs.	125 @175
900 lbs.	75 @125

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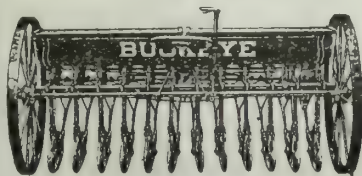
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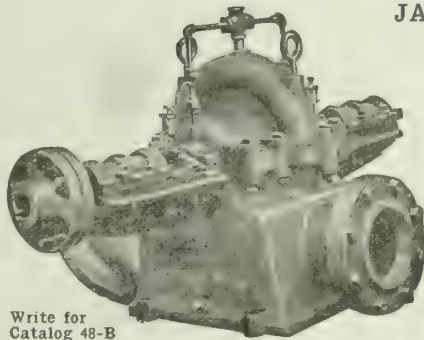
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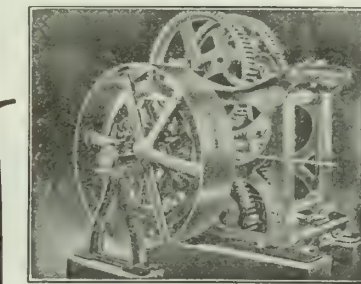
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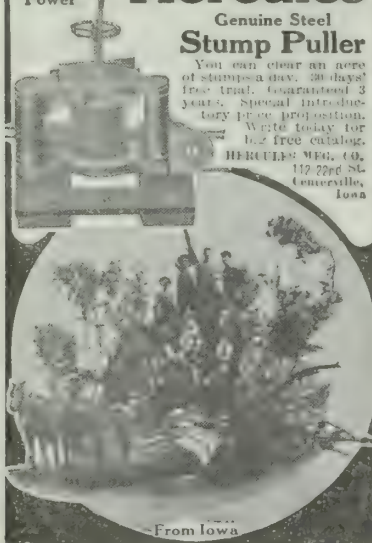
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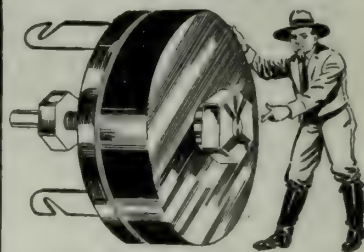
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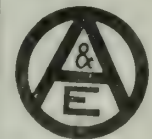
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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 3.

SAN FRANCISCO, SATURDAY, JANUARY 17, 1914.

Forty-Fourth Year.

Wild Wood and Orange Pruning.

[BY THE ASSOCIATE EDITOR.]

Whether it is entirely right or not, the most commonly accepted rule for orange pruning given out by people who know, amounts essentially to this: Cut out the dead wood, rub off the is quite evidently well taken. Naturally there are details which do not fit into this as a hard and fast rule, but the main point is quite evidently well taken. Naturally also, some variation has to be made with different varieties, for a seedling like the valencia should be and can be handled differently than a higher developed, more abnormal and delicate variety like the Washington navel.

Now, the writer is not an expert on citrus culture, and the following is based on a study with one of the most successful citrus men of the Lindsay district, financially and culturally, who gained his experience in southern California, as did very many of the most successful orange growers of the north, and the demonstrations of pruning methods was startling and convincing. The name is withheld in self-defense against inquiry and correspondence. It cannot be said that the ideas are at all new, however, for new and wonderful things are seldom worth much.

The Wild Wood of Navels.—Every live citrus man is deeply interested in the matter of bud variation as influencing the yield and the quality of fruit. The demonstrations of citrus pruning through the groves around Lindsay convinces one that the question of sucker growth lies very close to this matter of yields and quality, for good yields almost invariably mean fine quality, as is borne out by the theory of the matter.

This subject also relates more closely to the navel than the valencia, for the navel is a higher developed and more abnormal tree than the valencia, which is a seedling and therefore nearer the original wild type.

The theory of the matter is something like this. Our fruit trees are largely valuable in proportion to the distance they depart from wild customs, for in nature no plant will go to the trouble of producing so much fruit, especially so much pulp, as our domesticated fruits. The latter, specializing on fruit production, are usually of more delicate growth. If they were animals we would say they were high strung and too highly civilized, so to speak. Now, they frequently do fly off at a tangent, nearly always toward their original wild type, and in so doing naturally develop a more vigorous growth, and, likewise, as a matter of course, produce less fruit, and that of a coarser type.

Nothing so quickly causes a reversion to wild type as that same

reversion to vigor of growth. No kind of growth is so wild as a sucker or water sprout, and there you have the matter. That is why removing the sucker is the most essential part of citrus pruning, especially with navels. In fact, deciduous fruit

growers can take this lesson to heart, for water sprouts are proverbially poor producers of fruit. Tree records with peaches and apples show just the same reversion in quality and production as citrus fruits and it is very reasonable to believe that the cause of deterioration is both the maturing of sucker growth in the tree and the selection of buds for propagation from such wood.

It is very fortunate that established pruning methods call for the removal of suckers, though the reason for so doing is but little related to the theory of bud deterioration.

The Difference Apparent.—The difference is apparent at once between sucker growth and normal growth on a Washington navel. The suckers are very thrifty, for one thing, and the stem is angular. The growth is normally very upright, and as the wood hardens a bit, thorns come out. The whole type of branch is different from the navel type, and it is equally apparent that it must be poorer in quality.

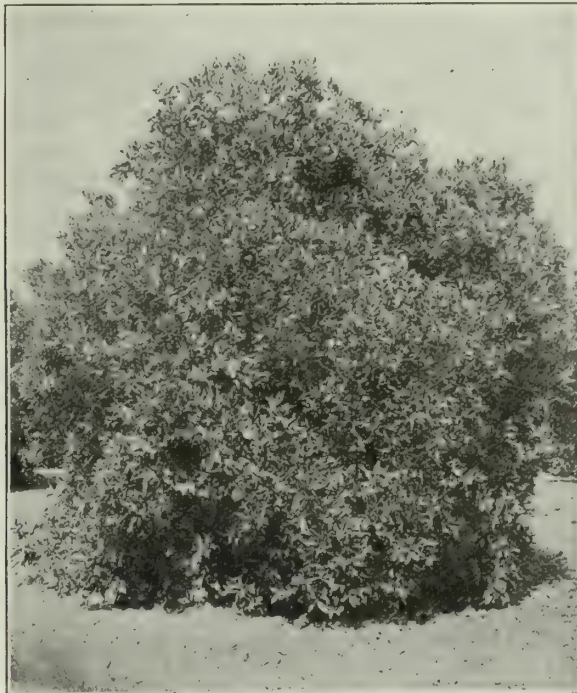
When it hardens the leaves are seen to be slightly different. From a distance they appear smaller, pinched and somewhat curled as a rule. The fruit is produced in less abundance, the quality is coarser, rind rougher, possibly having creases from the stem end, and the grower may decide that he has an Australian navel. If buds are selected from such wood the new tree is of about the same type as an Australian navel sure enough, for there is no chance of it reverting back to the more delicate Washington type.

Meanwhile the deterioration continues. The new branch is more vigorous than the main tree, and being more vigorous, it draws more heavily from the sap than do other branches, making still more growth and requiring still more sap, till finally it weakens the productivity of the rest of the tree and all the tree becomes unproductive. The first few years this wild wood produces fairly well, but after awhile it gets its own way with growth and goes back in production also.

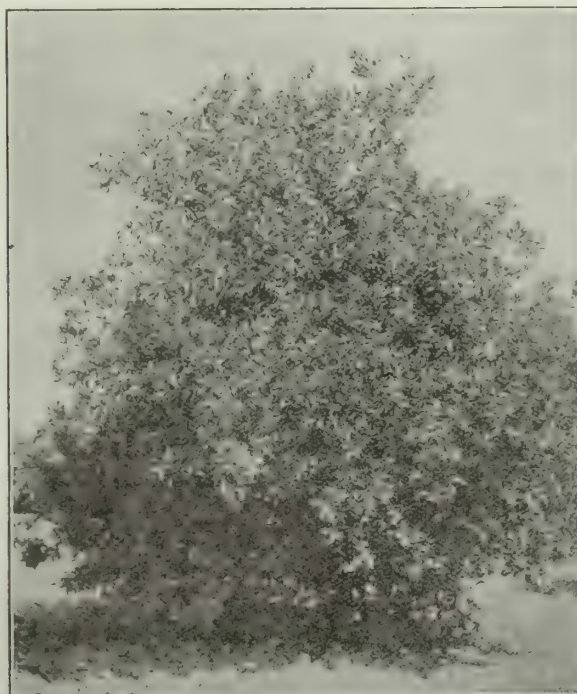
Its extreme hoggishness, in fact, was brought to our attention in one case

where a real Washington navel was surrounded by these reverted trees, and they so robbed it of plant food that it too was going back.

This whole proposition can clearly be seen on many poorly pruned groves that have most of their trees containing a large amount of reverted wood. The probability is that the sucker wood in the trees



Tree and Fruit True to Best Type.



Tree With Wood and Fruit Run Wild.

(Continued on Page 68.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, San Francisco, for the week ending at 5 p. m., Jan. 13, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka.....	.....	.....	19.64	...	36
Red Bluff.....	2.44	18.11	11.56	56	30
Sacramento..	1.04	11.04	8.31	56	36
S. Francisco..	2.37	15.16	9.73	56	42
San Jose.....	1.09	9.48	7.10	58	30
Fresno.....	.20	4.29	4.24	62	34
Independ'ce..	.00	4.07	4.19	54	18
San L. Obispo.	.16	12.27	7.83	62	36
Los Angeles..	.00	4.69	6.17	76	46
San Diego.....	.00	3.05	3.96	72	44

The Week.

Father Ricard needs a new telescope which will cost sixty thousand dollars. It will be set up in the University observatory at Santa Clara and will be a good thing for the State in many ways. It will be proper recognition of Father Ricard's attitude toward the general welfare for the public to make such a contribution. Presumably Father Ricard, like his great prototype, Galileo, could do good work with a couple of lengths of well-casing and a few chunks of window glass—but that is not the way we reward discoverers now-a-days. We give them the best outfit there is going—nothing less than a six-cylinder and a self-starter. If he were a microscopist he ought to have, of course, the best "spot lens" there is made, but we are not sure that it would work in telescopic, so we put the brake down on optics. One way occurs to us to get that new telescope very easily. If all the credulous farmers who were getting together money last fall to hire one of those explosive rain-makers, would contribute to the new telescope the same amount they would have eagerly paid to a pop-gun faker, the total would buy a silver-plated instrument with ball-bearings and automatic cut-offs. Besides it will be so much easier to pay this money, now that we are to have phenomenal crops, than it would have been if the money had been wasted on the sky-stormers whose percentage of efficiency is even lower than that of the prophet of Baal. And beyond that, even if some may still doubt Father Ricard's spotted theory, Californians certainly owe him a whole battery of sun-guns if he wants them, simply for the heart of courage and faith which he put into us just at the time when that organ was going flabby. What will you give for that telescope? We will see that it goes to the right spot.

The Stock Breeders' Assembly.

We thoroughly enjoyed the annual meeting of the California Stock Breeders' Association, of which some matters are presented in other columns of this issue. There were over a hundred persons present at some of the sessions, and widely distant parts of the State were represented. In point of numbers the assembly was but a fraction of what such a gathering should be, but in spirit, interest and confidence in the animal industry of California, it was thoroughly promising and satisfactory. It is very clear indeed now that such an association must live for the farming aspects of the industry. The range phases have their problems and the full influence of those who believe in live stock and live by its producing power should be exerted for the fair adjustment of environment so that the range will continue to add to the development of California, but the stock farm rather than the range must lead in order to elicit and hold the people in support of the sources of prosperity which lie in the domestic animal. Two years ago we suggested that to reach this end the association must be popularized and every man and woman who believes in the best animals kept in the best ways, although they may not be the large ways, must be interested in the work of the California Association and respect for its transactions, although, in the nature of things, all cannot maintain membership in it. The return of Judge Shields of Sacramento to the presidency last year was a recognition of the human interest in the institution, for Judge Shields always has to stop and think whether he likes a fine domestic animal or a man the better, and his purpose is to bring all men to the enjoyment of the best things in an animal as he enjoys them. His several talks at the meeting were charged with the spirit of appreciation which men and women must feel for fine stock if they are to attain it and profit by work with it. It is, of course, a matter of science warmed by sentiment and guided by economics, and those who feel it most are those whose association is closest with the agencies they create according to their own conceptions of the highest excellence for specific purposes. It was thoroughly in harmony with Judge Shields' humanitarianism in live stock that the association chose for its president during the coming year A. W. Morris of Woodland, for Mr. Morris is the greatest man in the State in his achievements with the breed with which he works because he has arrested the attention of the world by the records his animals have made. A man who appreciates such excellence and knows how to lead animals up to it, and a man whose personal life is given to it is naturally a leader for all who are desirous of working for the best as they learn to see the best. The lessons of such a life are for those who can begin, even in a small way, and strive for excellence because excellence is truly manly. If we were going to philosophize about it, we should claim that excellence is a manly quality manifested in the highest type of an animal which he can produce. Every grower should pursue this ideal and to place a man of this type at the head of an association should tend to popularize and broaden the scope of the organization. It rests with Mr. Morris to name a board of directors who will shape the working of the society, and we shall look for a group of men who will open it so wide in its policies and requirements that membership will be multiplied

and practical helpfulness and incentive may be vastly extended. This is a most important year, as it is preparatory to the Exposition of next year, at which Californians will have a chance to see and study the world's greatest achievements in all kinds of domestic animals. The way to fully employ this advantage will be to constitute the California Live Stock Association a great popular institution and to give all our breeders and growers of animals the benefit of the leadership and influence of such an institution.

The World's Meat.

We are exceedingly glad to have Mr. Jastro's carefully prepared statement on the visible supply of meat animals in various parts of the world and the per capita relations thereof in different countries. We are glad also to have his experienced conclusions that we are going all right in spite of the tariff removals. That is rather necessary to our peace of mind, because if we had not Mr. Jastro's longer sight we fear we should become a little rattled at the course of current events. For instance, it is telegraphed from New York that the free listing of beef and other food products under the new tariff law is causing enormous increases in the importations of foodstuffs into the United States, judging from figures issued today by the department of commerce. Importations of fresh beef, which amounted to 5,666,666 pounds in October, were practically doubled in November when 10,856,516 pounds were landed. More than half of the beef came direct from England. Cattle importations in November numbered 123,118 head, valued at \$3,306,723, against 43,758 head, valued at \$829,358 in November, 1912. Of course there is some comfort in the fact that so much of the beef comes from England, for England surely cannot play that game long, unless it be a matter of reshipment of a surplus sent to her. But Mr. Jastro covers the world, and therefore the game cannot continue long from anywhere, and American meat growers are sure to find hungry people and good prices.

In this connection readers will not overlook the reports of the Sheep Breeders' Association, also held in this city last week. Suggestions in this issue show that the members of this association will work to teach people the deliciousness of well grown lamb and mutton and we shall surely take a hand in that game later.

The University in the Stock Game.

We are very glad that the increased resources, both in men and money, of the agricultural department of the University of California enables that institution to attack local problems in animal feeding more vigorously than has hitherto been possible. At the assembly last week, Prof. G. H. True told of one set of experiments, in which sugar-beet pulp is the base ration, is being carried on at the Bloomfield ranch of Miller & Lux at Gilroy. Here four carloads of steers are being experimented with. Different amounts and combinations of roughage, including alfalfa, barley and rye grass hay, are being fed in conjunction with beet pulp, with a view to determining which of the rations may be most profitably fed. The more extensive experiments are being conducted at the feeding station of the Western Meat Company at Lovelock, Nevada. In the past, alfalfa only has been fed, and the results have been considered satisfactory. With the

upward trend of prices of meat, however, the question of the advisability of feeding grain in connection with alfalfa has become a live one, and this year for the first time grain is being fed by the Western Meat Company. The work is being conducted experimentally and in co-operation with the University of California, whose representative is in charge of the weighing of feed and cattle and the keeping of the records of the work. Now we shall have a chance to see how the old Pacific Coast policy of finishing on grass will go with an addition of grain. If it can be shown that feeding grain will be profitable, we may realize the prophecy made long ago, that the starch of sorghum grain, which we can produce in unforeseen quantities with a minimum of moisture, can be profitably used to balance the excess of protein in the alfalfa ration. Such a demonstration will be a corner-stone in our interior valley meat making and it will apply to every mixed farm throughout the newly developed portions of the State.

Queries and Replies.

Querists must submit full names and addresses.

Will He Gain or Lose Humus?

To the Editor: I have 160 acres of sandy loam soil three miles north of Doyle, Lassen county. I would like to put in 35 acres in rye and mix in about one-fourth of vetch to cut for hay later on. Will this make a good crop of hay in that locality? Is it necessary to mix some "farmogerm" with vetch. Will vetch and rye give a volunteer crop next year? My intention is to give the soil more humus in order to plant alfalfa the third year and at the same time pay me for outlay of seed the first year. The land is a desert claim.—R. K., San Francisco.

We do not know your corner of the State well enough to advise you about the moisture and temperature involved in your cropping. Supposing they are favorable, we remark that rye and vetch cut and fed green are very good, but if you are out for hay you had better grow vetch and oats. Whether the vetches need germs or not you can only tell by trying; in your case it may be more desirable than in other parts of the State where there has been previous wild growth of burr clovers and other legumes. Vetch and rye or oats cut for hay will not give you any seed worth mentioning for volunteering, unless you let the plants stand too long to make good hay. We doubt if your process will increase your humus unless you feed the growth on the place and save the manure. If you are going to take off a hay crop or two, the alfalfa may come upon less humus than the land now has. There seems to be a growing idea that cropping land makes more humus. It has usually the opposite effect.

Which Alfalfa?

To the Editor: Do you think there is any advantage in the Peruvian alfalfa over the Chilian. The seed is just double in price of any other. The seed house that has it for sale claims it will grow at a lower temperature than any other, is a more rapid grower, and the hay is fine and not so stemy and woody as other alfalfa. Now give me your opinion, and if anyone has raised both, let them give their experience through your paper.—C. P. G., Turlock.

The proposition is a good one; we ought to be hearing from many readers what conclusions

they have reached as to the local values of all these new alfalfas which they have tried. There is no use arguing about it except on the basis of local trials. As we understand it, all the things which you say the seedsman claims are true, but the most important one as to how it grows, as compared with common variety, during the summer with ample irrigation, needs to be demonstrated. If it beats at the summer game it takes the cake for yield. Then how long does it last? Who knows anything about those things?

Hogging Barley in an Olive Orchard.

To the Editor: I have an olive orchard about thirty years old; trees about forty feet apart. I was planning to sow barley in the orchard and to turn the hogs on it in the fall and to use the straw to plow under for a top crop. My neighbors tell me the barley standing through the summer will make it too warm for the olives and that they will not do well. I irrigate about three times through the summer.—F. A. P., Woodland.

You can handle hogs in an old orchard with less danger than in a young one, but still you must watch them. We have seen big trees skinned of bark as high as a hog could reach by standing on his hind legs. It probably depends partly upon what the hog has to eat, and partly on the cussedness of him—therefore we say, watch the hogs. It is true that a ripening crop of grain stands a good chance of injuring trees by reflecting heat and by helping to heat the ground—both of which are absent from a ground cover of alfalfa, which cools both the air and the soil. The way olives are now, we would not risk the fullest work of those trees for what we might make on a hogged-off crop of barley. It does not look good to us. Why not put in alfalfa and run a feed lot of barley and fresh-cut alfalfa on another piece of land?

Sick Orange Trees.

To the Editor: I have several orange trees with spotted leaf or black scale and gum disease, and I wish to know what to do for them.—Reader, Grafton, Yolo county.

It looks as though your trees had gone wrong both top and bottom. From the foliage and the gumming, one might guess that they were in a soggy place—either naturally so or made so by too much irrigation sozzled around the bases of the trees on a soil which could not distribute surplus water quickly. If so, the remedy lies in underdraining and wiser use of irrigation. For scales, the remedy is fumigation with hydrocyanic gas, if you have trees enough to warrant expenditure for the outfit; if not, spray with kerosene emulsion or resin wash or miscible oil wash, when the young scales begin running out from under the old shells this spring, and repeat during the summer according to the killing you do. It is not easy to prescribe for such a case in a paragraph: you need to study citrus fruit culture from the ground up.

Grafting Black Walnuts.

To the Editor: I have some black walnut trees about ten years old and would like to cut them off and graft English walnuts to them. Would you please tell me what is the best method and time to do it in?—F. H. G., Elk Grove.

We have explained this matter in the minutest detail in previous issues. Briefly it may be said: saw off the branches above the forks (say a foot or so usually), split the stock

at one side and not through the pith or center; insert the scions in the usual top-grafting way and wax very thoroughly—watching to see that the waxing remains perfect. It is usually better to leave a branch or two, to be sawn away after the new growth is under good headway. This takes care of part of the sap pressure, but this is not always necessary because often perfect success in grafting over the whole top at once. It is now the right time to go at the work.

Making Bordeaux Mixture.

To the Editor: In the preparation of Bordeaux mixture, does the solution of bluestone and water lose its strength if mixed too long a time before using? Is it absolutely essential for results that the lime and bluestone solution be poured together in equal amounts when making the mixture?—A Subscriber, Suisun.

The solution of bluestone in water does not lose strength if held in vessels of glass or wood, but the mixture of it with the lime must be freshly made. There is no exact ratio of bluestone to lime required in making Bordeaux. The greater the amount of bluestone the stronger the fungicidal quality and the greater the danger to the vegetation to which it is applied, but practically as good results are attained at less expense by making the amounts of lime and bluestone about equal.

Bitters for Birds.

To the Editor: Small birds (sparrows, I guess) are eating the buds out on my almonds. Is there any way to stop them, or anything which I can spray with or mix with bordeaux mixture that might be distasteful enough to stop them?—E. M. L., Escalon.

We are not aware that an application of that kind has been successfully used, although it has been often spoken of as desirable. If you wish to try it, get a little commercial aloes at the store and stir it into bordeaux mixture, spraying a tree or two to see whether the birds care about it. It is intensely bitter and is used very successfully in spraying bark against rabbits, etc. It is perfectly harmless and will have no effect on the bordeaux mixture so that you would not risk anything in the experiment.

Hogs in Almond Orchard.

To the Editor: It is my intention to plant an almond orchard and run hogs in it. The principal food for the hogs will be cut alfalfa. Will hogs injure the trees if they are ringed?—Subscriber, Winton.

We would not run hogs in any kind of an orchard that we cared much for—except, perhaps, to pick up waste fruit, and even at that they need watching. They are apt to injure trees of any age, unless you muzzle them, and besides that they plug down the soil to a hardness which no orchard surface should have.

Plowing-in Tomato Vines.

To the Editor: We have been readers of your question department for some time and greatly appreciate the help it gives. We have in between our young oranges Stone tomatoes, and I would like to know of what value as a fertilizer the frozen vines would be. Would it pay to plow them under? Unless it would, we would not plow the orchard this year.—H. B., Ontario.

You should surely plow them under for humus: besides, we do not wish you to let the land go unplowed this year.

Wild Wood and Orange Pruning.

(Continued From Page 65.)

is seldom removed and the center of the tree is a mass of upright branches, an indication of the source of so much reverted wood. It is the well kept groves that have the fewest reverted trees and branches, even when the owner does not follow the theory outlined above, for such a man removes the sucker wood at the start.

REGENERATION.—Such trees can be brought back to their proper type by the removal of this wild wood. Their vitality is not lessened, in fact it might be said to have increased by having such thrifty wood holding sway and the essential point is to cut it all out.

This wood can easily be recognized with slight experience and the desire to search for it. Real fruit wood is mostly tight grained, rather horizontal and meandering in direction. Wild sucker wood is commonly straight, rather open grained as judged by lines on the bark, and looks as if it had developed quicker.

Cut this wood out, though it is not green soft sucker. The fact that it has outgrown its fresh succulent age entitles it to no more consideration than when it was a month old. The man that limits his pruning to removal of dead wood, interfering branches and rubbing off suckers is blind to the most important point—the removal of the few suckers that have disguised their character by hardening wood and becoming branches. By their removal the tree can be and is renewed and a very nice grove we visited, above the average in quality, had been largely pruned the season before with the idea advised though there was a good deal of wild wood left to remove, enough to demonstrate fully everything on the subject to be demonstrated.

Professional pruners were working at these trees with an utter disregard of matured sucker wood or reverted branches until our instructor at the request of the owner put them in the right direction, so professional pruners very often don't give this matter much consideration or think of much besides the shape of the tree and a few such things.

A very self-evident proposition is that whenever a branch of wild wood is removed water sprouts will come up in abundance in their place and if a man leaves one of these to replace the old branch he is just exchanging one bad master for another.

In this connection a very important point is that there is also a kind of succulent growth that is not wild wood, but true Washington navel wood, and this can be left whenever there is any need for it. This can be distinguished from the other in having a rounder stem, a less thrifty growth and a generally finer quality. These do not send out thorns as do wild wood suckers.

VALENCIA DIFFERENCES.—There is one important difference between navel and Valencia pruning, that is related to the above discussion. The Valencia is a seedling, nearer the wild type naturally, and its sucker growth is normally of the same type as the fruit wood and it is safe to use this sucker growth in shaping the tree.

Our instructor, for example, does so and gets a young tree started much quicker than he would by waiting for ordinary fruit wood to grow, but

guides the new growth by pinching it back at the tip, or where desired. This gives shoots at the proper distance from starting point rather than a long straight branch, and in other words gives a tree of the proper shape.

NO HIGH PRUNING.—High pruning or low pruning is beside the question of wild wood and sucker growth; but it is a live question, especially in the northern districts. The grower who demonstrated about sucker growth disapproves of this. He purchased years ago a grove filled with wild wood as above, for a moderate sum of course, for it was naturally a poor paying proposition and an old grove. He cut out the wild wood, gave it good culture otherwise, let the branches touch the ground and when it was in good shape picked 2100 boxes from 20 acres within 18 inches of the ground. It is true that there is often injury to fruit touching the ground, especially when things get too damp. On the other hand as a person can see by examining such fruit, it is usually finer grained than the fruit produced higher up and therefore more desirable. Furthermore, if there is sufficient light and air, the fruit is frequently produced more abundantly than above.

This latter point corresponds with the leading theory of pruning. Horizontal branches go more to fruit than do upright ones, just as upright growing water sprouts make the poorest fruit wood. Likewise wood pointing downward does still better in making less wood growth and setting more fruit than horizontal branches. Wood therefore near the ground and pointing downward should set fruit heavier than wood anywhere else, which jibes with the facts as found where there is plenty of light and sunshine in the grove.

SUMMARY.—Now, that there is real bud variation aside from sucker growth is too true to be disputed, but above facts, apparent in every citrus district, almost in every grove, indicate the fact that the kind of variation a grower has to fear is essentially that resulting from sucker growth. That makes less fruit and poorer fruit. All will agree that buds from wild or reverted wood will give trees that are all wild. We will venture the belief that buds selected from a tree from which all sucker growth is removed will practically always give trees fully up to normal type and productivity. We would feel perfectly safe in planting such trees, we would say that every nurseryman should hunt harder to find trees without sucker growth than to find trees with all normal oranges, for one goes with the other, saving for rare true bud variation. We will further affirm that wild wood will soon start from any Washington navel with a pedigree a yard long if sucker growth is permitted to develop.

To visual observation good normal Washington navel trees in the citrus districts when grown under the same conditions yield in the same way and important differences in yield are accompanied by wild branches. In brief, cut out dead wood, rub off the suckers, the yield and quality of fruit will be good and the leading points of pruning the Washington navel will have been attended to.

The forest service collected 40,000 pounds of tree seed last year for use in reforestation work.



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Each ton contains 280 lbs. of phosphorous, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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THOS. S. DUANE, Prop.

Martinez, Cal.

Getting the Most From a Small Garden.

[Written for the PACIFIC RURAL PRESS.]

Anyone who has ever visited the Italian gardens near San Francisco, marvels at the ingenuity used in cropping the land and also at the variety of vegetables grown, for there are very few of those vegetables demanded by the city trade which do not receive the consideration of the gardeners.

One of the oldest of these gardens is owned by the Sechini Bros. on the San Bruno road about six miles south of the city, but still in the city limits. There are 25 acres in this place, 17 of which are trucked by the owners, and the balance rented out to other gardeners.

Although the growing and planting season continues the year round, on this place, the winter garden is considered the most profitable as it does not require any irrigation, which is not only a saving of expensive pumping, but what is more essential, a big saver of labor.

At this time of the year one finds almost everything growing in this garden except such crops as beans or other vegetables which are apt to be frosted during the winter season.

Those which are considered the main winter crops are cabbage, cauliflower, green onions, spinach, celery, carrots and beets. Lettuce and radishes are also of importance, but are considered more of a filler crop as they are both grown between the rows of the above named crops and not in separate patches as most people are accustomed to doing.

Cabbage and cauliflower both receive about the same care, the seed being sown broadcast in open seedbeds from the middle of August until September, and then the stronger plants are transplanted to the rows, which are two feet apart and the plants are about the same distance apart in the row. The planting is done with a hoe shaped dibble and while the plants would be too close for horse cultivation it makes ample room for the matured plant, as in this case all of the cultivating and weed pulling is done by hand.

After the planting of the above crops has been done, lettuce plants are transplanted between each cabbage or cauliflower plant and after leaving a small furrow for irrigation the balance of the space between the row is seeded broadcast to radishes. It will be seen from this that there is no wasted ground in this garden. A great many such combinations are carried out like the above, another one being to broadcast spinach and lettuce and later transplant cauliflower or cabbage.

Such cropping is naturally good on the ground, but it is not done spasmodically, for we were shown a piece of ground which was planted to potatoes last spring. The radish crop was grown as above described at the same time between the rows of growing potatoes. After the potato crop was harvested carrots and spinach were sown broadcast and later on lettuce plants were transplanted, making five crops from the spring season planting until the middle of November.

All crops which are planted in rows are irrigated by the furrow system, but those that are sown broadcast are planted in beds with a small border check around the outside to hold the water which is applied by the flooding

system, a small stream being used so that it does not wash the soil badly.

All of the seedbeds are made in the same manner as the growing beds except that they are kept much richer by the use of more manure.

The onion growing season lasts the year round, but they are all sold as green onions, as dried onions would take too long to mature to make the same returns per acre. They are first planted broadcast in the seedbed and later transplanted in rows in small beds like all other crops. These rows are about six inches apart and the plants are set three inches apart in the row. A large mattock is used to mark off the rows and the plants are laid top up in the small furrow. The dirt from the next furrow is used to cover the first one, and so on the length of the patch. This is one of the few crops where inter-cropping is not done, the ground in this case being kept free of all other vegetation.

Celery plants are the only ones which are grown in hot beds, they being planted in cold frames at or near Christmas time. After they have obtained a good size, usually about three months after planting, they are transplanted to long rows in the field, rows about two feet apart, and along in November each plant is wrapped with a burlap sack for bleaching purposes. The harvesting is done during December and early in January.

When one knows that this same heavy cropping has been done on this place for the last 37 years it is natural to wonder how it is possible to make the land produce good crops, especially as the soil is a sandy loam which ordinarily does not have much strength.

The fact is that it would have been worn out long ago if it had not been for a systematic fertilization. Horse manure is used, as it can more cheaply purchased from the city stables than any other, it being hauled back in wagons which make the deliveries of vegetables every day.

As much ingenuity is necessary in applying the fertilizer as in planning the different planting as it has to be used at such times as some top crop is being grown, otherwise a great deal of time is lost as root crops do not do well on freshly manured ground. We were told that about eight inches was applied on all of the ground once a year and also that the tops or other waste vegetable matter is turned under as fast as it is cut. This latter named work is done with large hoes and while it is much more work than it would be if done with horse cultivation, it is necessary in order to get the most from the soil in one season.

While the cultivating and weed killing can be done with hoes where the crop is grown in rows, it has to be done by hand where the crop has been sown broadcast.

The main feature of this garden which could be profitably put into use by the average farmer who wants a complete garden in a small space is the systematic inter cropping which is done, and in this respect it is doubtful if one would find anyone more adept than the Italian gardeners near San Francisco.

German pencil manufacturers are looking to California incense cedar for pencil wood.



Manzanillo Olives
From an Armstrong Tree.

PLANT ARMSTRONG TREES

Manzanillo Olives

We have a magnificent lot of these trees as well as MISSION and QUEEN varieties, well grown, thrifty and clean.

Here is what one of our many pleased patrons has to say about our trees:

Lindsay, Cal., Dec. 18, 1913.

"Mr. John S. Armstrong, Ontario, Calif.

Dear Sir:—Regarding the olive trees purchased from you last spring, will say they have made an exceptionally fine growth; very much better than the two previous plantings from another nursery which had the same care.

In my mind the two main reasons for this were the good packing and the fine fibrous root system of the trees.

In fact, the proof of our satisfaction is that the order of 750 trees which you received from us some time ago for 1914 planting, was given without investigation of price or condition of trees in any other nursery.

We are planning some on planting another 80 acres. How long will your supply of the quality of our previous order last? Would like to plant 2000 Manzanillos and 1000 each Mission and Ascolano.

Yours very truly,
EL TORRES RANCH,
A. S. McKellar, Mgr."

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Or, if you haven't quite made up your mind what you need, write, and I will be glad to advise with you as to what, how, when, and where to plant.

It will be to your interest to take it up with me if you intend planting olive trees, or any kind of fruit or nut trees, grape vines, berries, economic or ornamental trees or plants.

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Nothing will add so much to your country home as beautifying the surroundings by planting ornamental trees and plants.

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The Bolton Orchard Heater supplies the needs of the large orchardists on account of its reliability and its efficiency. It is good for the small orchardist because of its low price and cost of installation.

200,000 sold in one season. Hundreds of orchardists using and recommending the Bolton Orchard Heater. Their words of praise are worth more than anything we can say. One man can light 100 in five minutes.

Send for booklet R.P. It contains information about orchard heating—names of prominent orchardists who are using it and facts not generally known and which are suppressed in high priced heaters. Send today.

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Grafted French Walnuts.
California Black Walnut Seedlings.
Grape Vines, Berry Plants, etc.
Plants of the new Banner Strawberry.

Be sure to price our choice stock of apple trees.

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San Jose, Cal.

a bulletin of the U. S. Department of Agriculture, will probably result in some of the wastes being stopped. Of the tankage and blood from the country slaughter of food animals 75% is being wasted that might be saved. In addition, \$22,000,000 worth of ammonium sulphate, another valuable and costly fertilizing material could be made, is annually wasted by the practice of making coke in the beehive type of oven.

Tankage, a product of slaughterhouses consisting of such waste material as bones, horns, hoofs, hair, etc., contains a large percentage of nitrogen and other products used in commercial fertilizer and in the larger packing houses is carefully saved. In country killing, however, only 25% of the tankage and blood are saved for fertilizer. The nitrogen content of tankage is said to vary from 5 to 8% and its phosphoric acid content between 5 and 12%.

Dried blood is perhaps the richest in nitrogen of all the organic materials used in the fertilizing industries. Unadulterated blood when quite dry contains 14% of nitrogen, but as obtained on the market its content varies from 9 to 13 per cent.

From the figures estimated by the Bureau of Animal Industry, Department of Agriculture, as representing the total slaughter of cattle, calves, swine and sheep in the United States, in 1912, it has been calculated that if all the materials rendered available by this slaughter had been saved and converted into tankage and dried blood, they would have produced 222,535 tons of tankage and 79,794 tons of dried blood.

The introduction of a co-operative system among American farmers undoubtedly result in an increased utilization of blood and tankage for fertilizing purposes. In Denmark, country killing is being practiced on a co-operative basis in small country abattoirs, and the blood is carefully preserved.

The loss of ammonium sulphate, which compares favorably with sodium nitrate as a plant stimulant in the distillation of coal for the production of coke, is described in the bulletin as follows:

"In the main, coal is distilled in this country in that form of coke oven, the beehive oven, which does not admit of the recovery of the distillation products. Instead, they are allowed to go to waste. So we are indebted to the by-product recovery oven for the main supply of ammonium sulphate. The amount recovered is valued at about \$4,000,000, while the recoverable ammonia annually destroyed in the coking processes by the beehive ovens is valued at \$22,000,000. * * * At the beginning of 1912 there were 4624 by-product coke ovens in operation in the United States and 698 building."

The bulletin (No. 37) can be had on application to the Division of Publications, U. S. Department of Agriculture, Washington, D. C.

LATE OR EARLY PRUNING OF GRAPES.

To the Editor: I have your book entitled "California Fruits and How to Grow them," published May, 1912. I own and operate a small vineyard near Hopland, Mendocino county, California. All of my vineyard is over four years old. Some of the vines are

"THERE IS A REX FOR EVERY ORCHARD TROUBLE"
REX LIME AND SULPHUR SOLUTION
REX ARSENATE OF LEAD
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The Rex Sprays are the perfection of more years of practical experience than any line of Spray Materials on the market and are kept abreast of the times by the use of the best quality of ingredients that can be bought and being processed by the best science and skill that money will hire.

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WE SPECIALIZE—MAKE—SELL SPRAY MATERIALS ONLY—WE HAVE NO SIDE LINES.

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IN REX SPRAY MATERIALS YOU GET QUALITY FIRST AND PRICE TO CORRESPOND—NOT PRICE FIRST AND QUALITY ACCORDING. OUR DEPARTMENT OF INSECT CONTROL WILL ADVISE YOU.

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are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

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provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection. Call and talk it over with us, or write for our 1913-14 catalogue.

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The Very Best, None Excepted Spray Pumps

Do not buy before investigating our claims—because greater volume with $\frac{1}{2}$ power saved. No plungers. No packing. Positive delivery. No valves. No springs. No cams. Weighs but 60 pounds. Good for years of service. Can be attached to any outfit at small expense. State make and size.

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Pressure, Priming and Vacuum Pumps, Blowers and Compressors, $\frac{1}{2}$ to $\frac{1}{2}$ less power. We pump where others fail. Are sold on positive guarantee. Write today.

Baker-Hansen Manufacturing Company
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on resistant roots and part of my vineyard has been severely damaged by frost the last two years, and I am about to

follow your recommendation on page 367 to wit: "Early pruning has a tendency to make the vines start growth

early, consequently in frosty situations pruning is often deferred till late in the winter—as late as the middle of March in some cases." I am informed that this recommendation should not be followed on vines that have reached the maturity of my vines for the reason that there is too much sap in the vines to permit this practice of pruning as late as the middle of March. My grapes are Zinfandel, Carrigan and Grand Noir. We generally prune in January, and I am inclined to follow your recommendation as set forth in your book on part of my vineyard, unless you have data of Mendocino county that would justify my pruning according to the above extracts from your book as I take it each locality will require experimentation.—H. G., San Francisco.

When we speak about pruning vines early and late as influencing the starting of the new growth, it is intended to apply to pruning in the fall, say in November and early December, instead of January to March. Probably there would be difference enough between pruning in January and March to be noticeable in the time of the vines starting. As to the danger in pruning late because of the sap flow, it is practically immaterial. It has been shown by experiments that the first sap flowing from a good vine is practically nothing but water. In one test, if we remember correctly, six quarts were drawn from a vine to determine this point and the subsequent growth of the vine was not interfered with.

It is still a question as to whether the difference in the time of starting in late and early pruning is significant or not, and except in making a test for yourself, we would not interfere with the regular course of operations which has been found hitherto to be satisfactory.

FILBERTS IN HUMBOLDT COUNTY.

To the Editor: In your issue of Dec. 6, 1913 and Dec. 27, 1913, questions are asked and answered concerning "Filberts in California" and your opinion seems to be that they will not succeed in this State.

I understand the filbert is a cultivated and improved hazelnut and when the latter thrives and yields abundantly the former should succeed—either on its own roots or grafted on the wild hazelnut.

[This is the conception which we referred to as not yet realized.—Editor.]

The writer is familiar with the Coast region from Sonoma to northern Humboldt and has found wild hazelnut bushes growing in Northern Sonoma through Mendocino and Humboldt to the Del Norte county line—increasing in numbers and productiveness in the order named.

Some years ago he was employed in erecting a dairy building on "Bear River Ridge" between Ferndale and Mattole, Humboldt county, and on Sunday excursions found numerous clumps of hazel brush bearing large quantities of good sized, delicious nuts. On one sunny autumn day while hunting for deer, he discovered quite a large clump in a small depression on top of the "Ridge" where the brush was from 12 to 18 feet high and loaded with ripe nuts. Having no other receptacle he removed his shirt—tied up the neck and sleeves and gathered therein, during part of the afternoon, over half a bushel of shelled nuts.

Bear River Ridge is 1200 to 1500 ft. above sea level and only two or three

miles inland. Further east and north on "Bald" mountain and near the headwaters of Mad river are quite large areas covered with hazel brush, but they are not as large nor do they bear so abundantly as the Bear River Ridge bushes.

Northern Sonoma, Mendocino and Humboldt have more fogs and rainfall than other parts of the State, and from the fact that the parts of England and Italy, where most of the filberts of commerce are raised, have abundant rainfall, it would appear that possibly the failure to establish the nuts in the foothills of the Sierra and the interior valleys was on account of the long, dry, hot seasons. If some party with the enthusiasm and persistency of the Etter Bros. would take up the propagation and cultivation of the filbert in the little valleys and depressions of the coast range at an elevation of 1200 to 2000 ft. in Mendocino and Humboldt counties, it is quite possible that they would meet with success and a new product be added to the resources of California.—M. H. Morse, San Francisco.

[These observations on the occurrence of the native hazelnut are very interesting. We understand that Mr. Etter has already tried filberts and perhaps he will tell us about his results. We have no objection to a man stripping himself when he strikes a hazelnut mine like that which Mr. Morse describes. The point we made was that in experiments with the improved filberts of Europe he had better keep his shirt on.—Editor.]

A STANDARD APPLE BOX.

Congressman Raker has introduced a bill fixing the standard size of a box of apples, as follows:



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This book of garden knowledge will prove to be invaluable to those interested in flowers, vegetables, seeds, plants or trees. The information and instructions given are clearly and concisely written and the many illustrations throughout the book will give the reader a perfect idea of what he is ordering. We have spared neither time nor money in the preparation of this Garden Guide and we firmly believe it is the most authentic work on this subject ever issued. It is yours for the asking.

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We have become justly noted for the quality and reliability of our products. We endeavor to maintain the highest standard in everything we grow. That we have given value received to our thousands of patrons in the West is proven by the fact that we are the largest seed dealers on the Pacific Coast. All Good Seed Stores Sell Our Standard Varieties. Headquarters for alfalfa, grasses, clovers, etc. Correspondence invited.

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Depth of end, 10½ inches; width of end, 11½ inches; length of box, 18 inches; all inside measurements and representing as near as possible 21-173½ cubic inches. The penalty for any evasion of the law is fixed at \$1 per box.

Apple growers should see how this proposition, which is pending in Congress, will effect their interests.

It is rumored that as a part of the financial reorganization of the Natomas Consolidated with English capital, 5000 English colonists will be brought out and put on Sacramento Valley lands belonging to the company.

Franquette and Mayette WALNUT TREES

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Roses and Shrubbery
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A Protest Against Sour Grapes.

At the recent Fruit Growers convention at San Jose, F. B. McKevitt, prominent in our fruit shipping industry, as our readers well know, voiced a protest against the poor sour grapes which Californians are apt to ship at the beginning of the season. He alluded to the tasteful way in which eastern grapes are marketed and continued:

The Michigan and New York grape crops ripen at the same time as the bulk of our grapes which greatly enhance the difficulty in marketing profitably. It would seem that with the constantly increasing production of grapes here, and the even greater increase in the East that every grower and shipper would be alive not only to the importance, but to the absolute necessity of shipping nothing but the best and perfectly matured stock; from the middle to the close of the season this fact is recognized, but from the beginning to the middle of August, considerable quantities of grapes are shipped in such an immature condition that even swine would reject them as food. This is because of the fact that early shipments usually command high prices and the unscrupulous desire to participate in them has prompted shipping regardless of the maturity or the immaturity of the product.

The first carload or two of this sour trash can be sold in every large market at good prices, but as soon as the public has tasted the fruit (and demand is over) the appetite for California grapes is killed until the disagreeable experience is forgotten. At the very time that the public turns naturally to our splendid grapes, these cramping, teeth-on-edge producers appear and ruin the trade; later on, when full sugar development has been made and the fruit becomes the perfect food which nature intended it to be, the public gradually learns this fact, and then only will they buy again.

Early grapes are not sour if picked in proper condition; if every section can be compelled to market its product when ripe and then only, there is no doubt as to the ability of the market to consume much larger quantities than in the past and at a better average price. It is a shame that premature shipments of Thompson Seedless and Malagas from the lower San Joaquin valley should be permitted, as these shipments absolutely spoil the market for weeks to come, not only working a great loss on subsequent shipments of good grapes, but perpetrating an actual fraud upon the defenseless consumer, who being unaware of the unripe condition, invests his money in them only to find that they are too sour for consumption. Such grapes are unfit for food, and if eaten, are liable to produce serious gastric disturbances; it may be that the pure food law could be made to apply; if it cannot, then something else must be done to protect the industry and the consuming public.

A law defining the percentage of sugar that grapes must contain before they can be considered proper food for human beings would cover the ground. It has been found that grapes containing 18 per cent of sugar are palatable—a higher percentage of course is better. Public sentiment should be educated to the fact that great injury threatens table grape growing unless this minimum standard is adopted. Thinking and honest growers should

demand that no fruit under this standard should be packed, or accepted for shipment; shippers should reject all immature shipments whether purchased or offered for consignment, and measures should be taken in every locality to see that this is done. If the evil cannot be successfully handled in this way, then let us have a law that will fittingly punish the perpetrators of this fraud and protect the fame of our magnificent grapes, as well as the fair name of California.

In the opinion of many of our most intelligent growers and shippers the principles of standardization should be made to apply to all shipments of fruit both green and dried. As in many localities nothing has been done in this direction and probably never voluntarily will be, I propose that this convention appoint a committee to whom this matter shall be referred, with instructions to draft a comprehensive law covering the subject, to be presented at the next session of the California legislature, and to take all necessary steps to secure its enactment.

COLD STORAGE SAVES FROZEN LEMONS.

That frozen lemons can be saved and marketed with little loss in value if handled properly has been discovered by specialists of the U. S. Bureau of Chemistry at the Citrus By-products Laboratory in Los Angeles, working in co-operation with the Lemon Association of San Dimas, California. The working principle of the matter is that frozen fruit which thaws out gradually suffers much less than fruit which thaws out rapidly, a fact which has long been known.

Following the severe frost of last January, a number of boxes of frosted lemons from a grove near the San Dimas packing house were gathered and stored in a room where the temperature was between 45° and 50° Fahrenheit. Samples of this fruit were compared each week for several months with unfrozen lemons stored under the same conditions for the same length of time and with fruit which had been left on the trees in the frosted grove. In appearance, taste, weight, acidity and quantity of juice, a large proportion of the frosted lemons which were picked and stored where they thawed gradually compared well with the unfrozen fruit. That which was left on the trees lost juice rapidly and decreased in specific gravity and general appearance due to an ever increasing thickness of the skin and to puffy hollow centers.

The application of the above discovery can be made, of course, only to those fruits which can be picked soon enough and stored in a properly cooled warehouse. It does not seem that fruit thawed out rapidly on the trees can be saved in this way.

In the Department's experiments on the cooling of fruit previous to shipment no apparent damage was done to lemons even when the temperature of the cars went considerably below 32° Fahrenheit.

STRAWBERRY PLANTS

50c per 100 Plants

Klondyke—Brandywine—Lady
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Ask for special seed prices for large
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Fruit and Nut Trees, Ornamental, Evergreen and Deciduous Shade Trees, Berries, Grape Vines, Flowering Shrubs, Palms and Roses. The best that care and experience can produce.

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Write and get our prices. You will find them as reasonable as any, considering the quality. Remember a cheap tree is dear at any price.

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We will make, without charge, the analysis of any soil a customer may send us, and give full advice as to what are its needs in the way of a fertilizer.

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GOOD NEWS!

POLLARD BROS. in the market again with FULL STOCK A-1 CITRUS TREES. Be safe—write for catalog and prices and order early.

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Trees, Plants, Shrubs, Roses, etc. We have the finest Ornamental Stock in California. Our packing and shipping facilities are unsurpassed. If you anticipate planting Apples, Roses or any other stock, write for our beautiful 1913-14 Nursery Catalog, which is full of fine illustrations and of interest to every planter.
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FRESH HORSE MANURE

As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

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Sempervirens Cactus Farm

JOHN ZUUR, Prop., Santa Rosa, Cal.

Ask for 1914 Catalogue.

Hints For Mushroom Culture.

BY PETER ARNDT OF LOS ANGELES.

I have been growing mushrooms on the Pacific Coast for several years and have always been successful because I have used strictly scientific methods. Many are successful raising mushrooms in their cellar—only for home use, however, providing your cellar can be kept in an even temperature with plenty of light and air, the cellar method is all right. You can not expect large and profitable crops unless you have an especially built house or an old out building in which to raise them.

Start first with a bed 10x10 feet—which sounds like a very small beginning indeed, but this size bed should produce at least 200 pounds of mushrooms.

Secure a two-horse load of stable manure (preferably horse). Wet it down thoroughly, and turn it over daily with a pitchfork. As soon as it dries out pretty well, wet it again, and repeat the turning over process. Do this for about ten days, and then transfer the compost or manure to the beds you have already prepared.

Pack the manure thoroughly in the bed to a thickness of about seven inches, and let it stand. Place a thermometer in the bed, to a depth of about three inches; the temperature will rise to about 75 or 80 degrees. When the temperature reaches this point, cut your spawn into pieces about two inches square and set into the beds two inches below the surface and one foot apart. (If you don't use a thermometer you will be safe to set your spawn one week after packing the bed.)

One week after setting the spawn cover the bed to a depth of one-half inch with fine sifted garden soil; after that sprinkle the bed lightly from time to time; just enough to keep it moist (not wet).

The mushrooms will start to appear in from six to seven weeks. If you can keep your bed at a temperature of about 60 degrees you will get fine results, but a temperature of from 45 to 75 degrees is all right, and with proper sprinkling will produce just as good results as an even temperature of 60 degrees.

Beds can be built one upon the other leaving about two feet of space between each bed. Never use a dark room or house for mushrooms, but be sure that the beds are protected from the direct rays of the sun. A little artificial heat is a good thing in the winter as the temperature should never be allowed to go above 70 degrees or below 40 degrees. The house in which the beds are located should be on rather high ground—at least high enough to afford good drainage.

The brief methods which I have outlined cover practically the entire subject. Any good reliable grower from whom you purchase your spawn is always ready to answer any question or to coach you until you become thoroughly familiar. Even if you have only a city lot, you have plenty of room to profitably grow them.

COVER CROP AND WALNUTS.

To the Editor: In all my reading regarding the value of vetch as a nitrogenous crop producer, I haven't as yet read an article as to when is the time to plow under to get the greatest results, regardless of any conditions. In the selection of Eng-

lish walnut scions, should they be out a few weeks before using them for grafting? How should they be kept during this time, and how long will they keep. Does the bleeding of the stumps affect the growth of the grafts?—A. K., San Jose.

[The best condition is when the pods are green and the stem beginning to yellow at the base. Walnut scions should be cut and stored in a cold place if there is danger of becoming too active. The stock should be a little more advanced than the scion. In grafting large trees, sometimes bleeding "drowns" the scion. It can be checked by boring a quarter-inch hole into the stump near the ground.—EDITOR.]

REJUVENATING AN OLIVE ORCHARD.

To the Editor: I have an olive orchard on hilly ground which has been neglected for fully three years and as I am anxious to improve it by cultivation, grafting, pruning and fertilizing, I want to get such information as will insure success, so ask the following questions:

Will it be best to prune heavily and when? Is horse manure as suitable as most kinds of fertilizers and when should it be applied? What variety is best to graft and should it be done? The pickling olive trees are Mission and Manzanilla and about 12 years old. The oil olive trees are on an average of 25 years old—and should we treat the two ages and two varieties quite the same?—C. P. C., Auburn.

[One cannot tell you how much to prune without seeing the trees. Of course you should saw out all dead wood to a live—place below and paint over all large cuts, cutting to a side branch and not to a stub, which will give you too many small shoots. Remove also surplus branches which cross and interfere—unless it would make the tree too scant and leggy. If the tree is so thick that a good amount of light is not admitted, some of the interior growth should be removed to encourage better shoots. Read California Fruits to see what are the purposes of pruning in general and with the olive in particular. Horse manure is thoroughly good for the purpose; spread it liberally now and plow in later when the danger of washing is less—if the trees are on slopes. There is no need to graft in anything now; the varieties you have are about the best sellers. Keep watch of varieties and graft in next year or later if you think best. Treat all the trees in the same way to begin with; of course the old trees may show need of more cutting for restoration of newer wood.—EDITOR.]

EATING LEAVES ON LOGAN-BERRIES.

To the Editor: Last year something ate the green leaves of my loganberries as fast as they came out, and as a natural result spoiled the crop. I could not discover the cause of this mischief and should be glad if you could advise me as to both the cause and how to take steps to prevent it in future.—SUBSCRIBER, Napa.

[You will have to catch the culprit before we can prescribe. We have not seen such work done. Have you looked for leaf-eaters with a lantern?—EDITOR.]

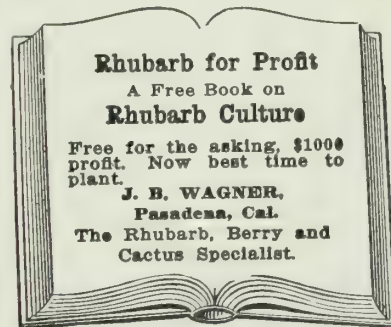
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Agriculture at the University.

The report of Dr. D. P. Barrows, who is acting president of the University in the absence of President Wheeler (who returns to his place this week), shows that the College of Agriculture now leads all the other technical colleges in the attendance of regular students viz: Agriculture, 510; Commerce, 277; Mechanics, 351; Mining, 122; Civil Engineering, 245; Chemistry, 65.

A particularly interesting part of Dr. Barrow's report deals with the function of the College of Agriculture in the present condition of State development. He says:

"The constant growth of the urban communities at the expense of the rural has awakened apprehensions of the results of city life. It seems to be the disposition of men of our race to regard city life as abnormal and unhealthy and the tendency of population to crowd into cities as an indication of depravity. It is perhaps more just to the facts to hold that the city has always been the center of civilization, the field of man's highest political and intellectual achievements, and that the widespread movement into the city limits observable today is directly occasioned by the growing enlightenment and awakening of the entire body of population and is in obedience to the highest instincts of human kind. Cities present dangers, but they none the less have the resources, the wealth, the intelligence, and the organized public spirit to remedy these dangers and to solve their problems. There is an enormous accumulated experience in regard to city life that is at the service of the race.

"On the other hand, the country has suffered from neglect and depreciation and it continues to suffer because of a widespread sentiment of the inherent wholesomeness of country life which prevents realization of the harshness and barrenness of existence which too frequently is the lot of the agriculturist and his family. It is the country even more than the city which is menaced by the migration of the more active elements from the rural districts into urban. It is the rural districts moreover which man be most prejudicially affected by the settlement of foreign immigrants. The city is a great assimilator. It is able to take huge increments of foreign born population and rapidly mould them and their children to the standards of American life.

"The country, with its sparse population, its isolation, and its unorganized social activity, has little such power. Foreign immigrants located in communities in the country tend to remain foreign, to perpetuate their foreign speech and prejudices, and to long resist incorporation into the American nation. All of these considerations give the highest importance to the work which lies before the department of agriculture of the University of California.

"The State is already more than 60 per cent urban. Its immense area, the great variety of its industries, the isolation of many of its small communities, the considerable foreign element settled in nearly homogeneous farming communities, and the much larger European immigration which is anticipated in the immediate future, call for the organization and support of just such a force as the department of agriculture represents."

Of the attitude of the College of Agriculture, Dr. Barrows says: "The members of the department have a program and a spirit and knowledge that might well serve for inspiration to every other university department."

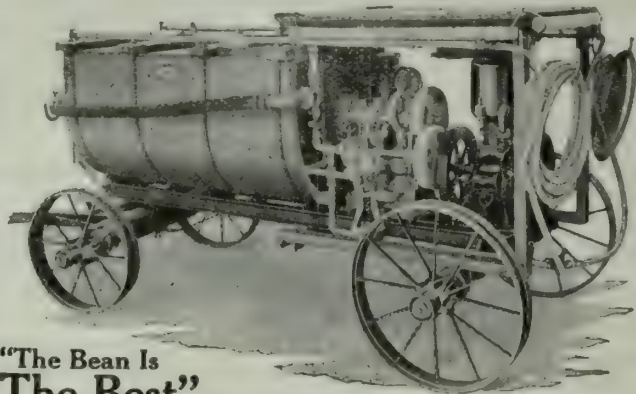
APRICOTS ON MYROBOLAN.

To the Editor: We have some land which is well located for apricot planting, and being in what is called "chocolate dry bog," the best stock to use will probably be the Myrobolan. Understanding that this stock has a dwarfing habit when used for apricot stocks, I am wondering if this feature retards fruiting and whether or not trees have proved profitable.—F. K. Woodlake.

[Apricots on Myrobolan are all right for sorts favoring this root. Bearing is not postponed. Dwarfing would have a tendency to hasten fruiting, but there is no dwarfing which makes the roots undesirable, so far as we have observed. The apricot has a tendency to overgrow under our conditions.—EDITOR.]

A bill has been introduced in the House of Representatives by Congressman Woodruff for the establishment of a Bureau of Postal Highways to cooperate with the various States in the improvement of public roads over which mail is carried.

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Drills in Alfalfa Sowing.

To the Editor: From time to time I have noticed in the RURAL PRESS answers to queries concerning the sowing of alfalfa seed and if my memory is right the answer generally advised the use of a drill "by all means".

The last answer on page seven of the issue of Jan. 3, 1914, to the party at Atwater "who has sandy soil and is short of funds" is quite correct in regard to the drill, but on other types of soils which are not many miles from Atwater the use of a drill should be looked into very carefully before starting over the field with a load of seed that cost somewhere around 17c. per lb. to say nothing of the disappoint-

ment that may be in store for the man who is "short of funds."

Nearly all the drills that can be had in this part of the country are disk drills. On sandy soil that is not apt to bake after a shower, the disk drill is no doubt all right. On heavier soils such as are found around Ceres and Modesto and also on the West Side, a slight shower may ruin the prospects of the seed coming up providing the shower comes before the sprouts are above the surface.

The disk drill is all right inasmuch as it distributes the seed and gets it under the surface, but it is here that the shoe pinches. Unless the disks are set to plant the seed about one inch deep most drills of that type will not do good work owing to the uneven surface of the harrow marks (the field having been previously harrowed) and one inch deep on heavy soil is more than enough.

If after sowing one inch deep the weather should be warm and dry it is likely that an excellent stand would result, but if it should rain and then bake before the sprouts are out the field will be either lost or a thin stand will result. This was our experience on the heavier "sandy loam" and we planted three times and each time it rained and baked, and not enough alfalfa came up to call it a thin stand.

There is little in favor of sowing the seed broadcast as it scatters it over the ditch banks and does not put it on the ground in the most satisfactory way. There is another type of drill, however, that maintains the feature of even distribution and at the same time puts the seed in a place that is apparently safe as far as the rain is concerned.

Some very fine stands have been gotten south of Modesto with this type of drill. It consists of a number of rollers which are about three inches thick and twenty inches in diameter. The periphery of the rollers is A shaped somewhat like a clod smasher. These rollers make grooves in the seed bed, and behind each roller seed is dropped by the feeding device through a tube and is deposited in the bottom of the groove.

A light chain drags in the groove following the seed tube and tumbles enough dirt over the seeds so that they are barely covered.

If the seed bed is at all moist the seeds will sprout in a few days and if it rains on the field before the seeds are sprouted the thin layer of dirt does not bake, which covers the seeds, soon enough to prevent their coming through. If it rains hard there will be considerable dirt washed over the seeds, but upon drying and baking a crack will form at the bottom of the groove and let the sprouts out. The writer had the pleasure (?) of seeing two certain fields of the same type of soil planted at the same time.

One was put in with a disk drill, the other with the old fashioned contrivance I have described. It rained hard about two days after the sowing was finished. Both fields baked. The disk drill job was a complete failure and the "groove" drill job resulted in the prettiest stand a man could wish for.

For early spring planting when it is likely to rain at any time it might be well for those who contemplate sowing alfalfa on heavy "sandy loam" to look into the merits and demerits of a disk drill.

RALPH L. COLEMAN.

Ceres.

By E. B. D.

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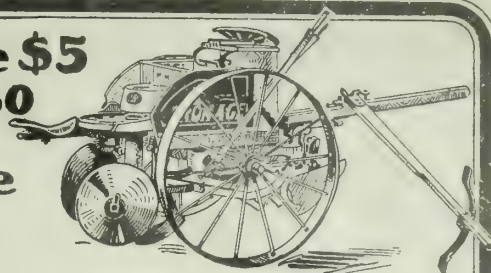
Send for special information blank, R P

You can fill this out and get a complete idea of the condition of your orchard. This blank will explain your troubles to Mr. Foster and he will tell you specifically just what you ought to do and how you ought to do it. You cannot overlook anything if you fill out this blank.

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In spite of predictions, apples this year are bringing heavier returns than they have for a number of seasons. Pacific Coast apples are in big demand. We have a magnificent stock of the finest varieties including Spitzenberg, Baldwin, Staymen Winesap, Rome Beauty, etc.

Almonds

We want to call particular attention to our almond stock of this season. Our trees are exceptionally good—but we are making some low prices due to a very heavy stock. Our trees are grown on both almond and peach roots. Write for particulars.

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Constructive Agriculture—No. 3.

The Grading of Cream.

[By the Associate Editor.]

The following is more truly "Constructive Agriculture" than almost anything that could be taken up, for the following reasons:

1. It can build up and profit the whole dairy industry, especially as it applies to butter-making.

2. It is to the financial interest of the individual dairyman and creameryman to grade cream.

3. Improved dairy methods lie at the basis of its successful operation.

4. The present method of buying cream without regard to quality is so demoralizing to the industry that this subject is recognized throughout the State to be the most important problem connected with the commercial side of dairying.

5. Within a month or so it is extremely probable that dairymen all over California will be called upon to sell their cream on a graded basis, as so will have to face the problem.

If anything can be done to make dairying more profitable, to say nothing of having it conducted on a cleaner, better basis, it is to be strongly promoted, and cream grading will do all that.

THE PRESENT SITUATION.—According to the present situation, save in a few cases, cream is not graded—good and bad all go in together at the same price and to make the same butter, being unfair to creamery, unfair to the dairyman who wants to be decent, and injurious to everybody in its effect. Nearly everything else is sold by grade and grading causes an effort to put out the best quality and highest priced article possible, developing thus the market. Contrarywise, selling cream with an utter disregard of quality has simply served to discourage decent methods and lower prices of the finished product, and so of the cream itself.

It is cheaper to produce poor cream than good, for it takes less attention and care. A man builds a fine barn, with concrete floors and other modern requirements, for he wants to dairy properly and knows that almost universally the man that produces the best product makes the most profit. His milkers are instructed to see that the milk is produced properly. Separator and other utensils are selected and in fine shape, the cream is kept cool; everything is done to obtain a clean flavored product.

What happens? When that cream is delivered at the creamery it brings just the same price as cream from a neighbor with a shack of a barn, who probably milks in a dirty corral to boot, lets a little cold water run through the separator do for the cleaning, and gives as little care to the cream as possible. Neighbor number two can produce cream so much cheaper that neighbor number one gets slack, too, or goes out of business.

When the good cream itself goes to the creamery it is mixed with the poor cream and all the butter suffers in quality. Now it goes without saying that good butter will sell for more than poor butter, so the slovenly dairyman not only gets as much for his cream as the good one, but he lowers all prices.

WHO IS TO BLAME?—The creameries

and nobody else have to bear the blame for this condition. Laws can hardly be enforced effectively when everything tends to make the profit come by ignoring the law. You can't club a person into being good when you coax him to be bad. The competition among creameries for cream has been so strong that sooner than lose a customer they will take anything in the way of cream. At the same time in order to reject cream there has to be a definite method of judging and this is done by the grading system.

Several large creameries are or have been buying cream by grade and the California Creamery Managers Association has adopted a standard of cream quality, employed a secretary this January in the person of Prof. E. W. Major, and shortly will start systematic grading of cream in nearly all parts of California, or so it is planned.

CREAM STANDARDS.—There are to be three grades of cream received, which are described as follows:

Sweet cream: Must be absolutely sweet and of clean flavor. Must be well cooled and produced from healthy cows. Must be delivered daily in clean cans free from adulteration and testing not less than 35 per cent butterfat. This grade of cream is to be used for commercial sweet cream trade, and always commands a big premium over cream used for butter. Its production will not interest most dairymen.

Cream for the butter maker is of "A" and "B" grades.

"A" grade cream is to be sour cream (and not very sour either) of clean flavor, produced from healthy cows. Must be delivered at least every other day in clean cans and be free from adulteration. Must test not less than 35 per cent butterfat. This cream must make a grade of butter classed as "Commercial Extras," scoring not less than 92 points.

"B" grade cream is to be sour cream with no unsanitary objection. Must contain not less than 30 per cent butterfat. Must be delivered every third day, but must make a grade of butter classed as "Firsts," that will score not less than 89 points. This cream contains half as much again acid as "A" cream and more than four times as much acid as sweet cream.

Cream falling below these standards is not wanted at any price.

HOW TO GET THESE.—"A" cream must be only moderately sour, "B" cream only sour enough to do no harm to the butter. That simply means to look after the cows and milk with moderately good care, then to have clean separator and handle and store the cream so that it will not sour more than could reasonably be expected. The requirement of 35 and 30 per cent butterfat is the easiest thing of all. It simply means that the separator is to be adjusted to skim a thick rather than a thin cream. The dairyman gets more skim milk as a result, has less weight and bulk to handle and gets as much butterfat. It should be done without reference to price at all.

An experienced creameryman gives the following four great faults in cream production, which will be a help in getting "A" cream at little trouble.

1. Milk in stable rather than cor-

ral. Or, if corral milking is practiced, use a Fresno scraper on it frequently to remove all loose dirt. Always milk through cloth in the corral, for dust will fly at the best of it.

2. Run boiling water through the separator at least once a day and clean, cold water through it after the second milking.

3. Always cool the morning's cream before putting it with that of the night. This is possibly the most important point of the four, and easiest neglected, because so simple. It is too easy to put the ten gallon can under the separator, fill it up and be done with it; easy also to run cream into another can and cool it before mixing, too easy to care about.

4. Keep cream as cool as possible until delivered.

Begin to be careful in winter. Cold weather delays souring and the dairyman can be careless and yet deliver cream from which it is possible to make pretty decent butter. Then summer comes and he is out of the habit of caring properly for the cream and the quality drops like a shot. An estimate is that in winter about 80 per cent of the cream delivered at California creameries would grade "A," but in summer only about 40 per cent.

MARKET HELPS.—The price to be obtained for the grades will be 2 cents more for "A" than for "B" cream. Resulting big advantages will follow. For the first, this will make dairymen produce fine cream and therefore the quality of the whole butter output will be improved. In the second, there will be so much less poor cream turned in that this will not mix with nor demoralize the quality of the butter made from the good cream, as is the case now. For example, a successful creamery operator lost in a butter scoring contest simply because a customer skimmed the milk of a cow only fresh a couple of days. Naturally this lowered the commercial standard and price of that batch of butter, and similar cases are universal.

In the future poor cream will be churned alone in most cases and sold on its own merits. Developments may be seen in the case of our co-operative creamery. They got no poor cream at a whole butter output was "Extras" with no confusion of manufacture or marketing and the creameries where this occurred return the greatest profits to dairymen of any in California.

Better cream will surely mean higher general prices. Never has California gotten such a lesson in this as this winter with the arrival of the New Zealand butter, produced under government inspection in ideal fashion. It crossed the ocean and nearly took our fresh extras off their feet, though it should only have been on an equality with our fresh extras, often sold retail at as good a price, and lowered our quotation materially. It never would have entered, or at least had any great effect if all our butter were of as fine a quality.

Now, extra butter is not abundant enough and some butter is called extras that should grade lower. "Firsts," which are an inferior grade, frequently go to the consumer under the brands belonging to extras, because the customer, getting used to the brand, will take any butter in the package that is fairly satisfactory. Never though, will as much be used or the demand and prices be so good for

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

**Gombault's
Caustic Balsam**
IT HAS NO EQUAL

For the Human Body

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

Perfectly Safe and Reliable Remedy for
Sore Throat
Chest Cold
Backache
Neuralgia
Sprains
Strains
Lumbago
Diphtheria
Sore Lungs
Rheumatism
and
all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES
Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."
OTTO A. BEYER.
Price \$1.00 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

FOR THE "LAND'S SAKE"

BUY A

BOSTROM IMPROVED

FARM LEVEL

which has TELESCOPE enabling you to read the Target over 400 yards away, and

TERRACE, DITCH, TILE DRAIN, IRRIGATE

your land properly, and save surveyor's fees. It is sold by up-to-date hardware and general merchants everywhere, and guaranteed to be the most

SIMPLE, ACCURATE, DURABLE AND COMPLETE outfit ever made for all farm work. If your dealer hasn't one in stock, he will order for you from a nearby hardware jobber.

Write today for description of Level, and details of our MONEY BACK GUARANTEE.

BOSTROM-BRADY MANUFACTURING CO.
94 Madison Ave., Atlanta, Ga.

"Imperial" Double Duty Engine Disc Harrows

Strongly built, simple in construction, easily operated. It isn't a question of whether you can afford one, but whether you can afford to do without one.

Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.
Wholesale Distributors.

CALIFORNIA NATIVE PLANTS

Write for my new price list of California Native Plants, containing fifty-eight choice species, all of which are worthy of a place in any garden.

THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.



an inferior as for a superior product. Poor butter cuts off demand, it is the greatest friend of oleomargarine and butter substitutes in existence.

In spring a shortage of real extras lowers prices. You can't store any but the best butter, therefore butter that might be stored is thrown into consumption and naturally reduces prices. The northwest and into the Rocky Mountain states would store our butter in spring if possible, but pay a cent more for Eastern butter, as it will store better. This trade could go to us, remove our price lowering surplus, and give us a cent a pound more as well. Equally it is true that a superior butter will stand long shipment when a temporarily good butter will not, thus enabling us to sell lots more butter elsewhere than we do now. In fact the advantages of having a good product of any kind are so well known that they hardly need to be spoken of.

SUMMARY.—If one needs definite demonstration of quality, he need only look at the reports of the butter scoring contests given in our columns when held. Probably less than half the creameries entering will turn off butter that would score extras, or be entitled to full price, and the entries in some instances must be of selected lots. The rest can receive full prices only by loose commercial grading and cannot be in the class with butter produced as is New Zealand butter, or California butter made from high quality cream.

The dairyman will not get any more above "quotation" when grading is practiced than now in all probability, but he will get more through the better quotation for better butter, and through the wider sale and distribution of California dairy products.

There will be trouble in cases when cream is rejected for poor quality, but no industry can prosper in turning out poor material and the plan to grade cream is one of the best things possible for the conscientious and decent dairyman and for the industry at large. We are getting ahead in California and one thing after another is being done to increase production and raise the quality of the products of our great State.

LIME ON LAWN.

To the Editor: I want to fertilize my lawn (mostly clover) with fresh chicken fertilizer, in which there is a generous sprinkling of lime. The ground is well drained, rich, and inclined to be a little gravelly. I wish to know if the lime will prove detrimental instead of enriching the soil still more. I intend to apply it, and if it isn't raining will turn the sprinklers on, to get it close to the roots. Also how close should the same fertilizer be put to trees, vines, etc., on the same kind of soil.—Subscriber, Rutherford.

[The fertilizer, including lime, will do lots of good, not harm unless too much should be used. Lime is one of the best things for clover that there is and clover will not do well unless there is plenty of lime in the soil. If it were applied as quick lime it might do harm, but being exposed to the air it will be in perfect condition for soil. Your plan of mixing lime with manure, however, is not good as lime injures manure, as it drives off nitrogen, the best part of it, and in the future, use gypsum rather than lime for the hen houses. Fertilizer had better be evenly distributed over land rather than applied close to the roots of trees and

vines for the roots go all over, and unless some special reason for so doing exists it is not well to put any more fertilizer close to the roots of trees than off in the center of the rows.—D. J. W.]

BREAKING INTO THE SAP-FLOW.

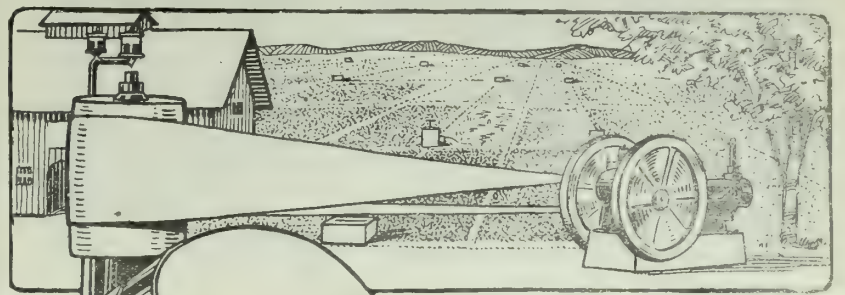
To the Editor: The enclosed clipping was taken from an Eastern weekly, and I am writing to ask if you have ever heard of such treatment being given to old trees, and, if so, is it successful? I am very much interested in this, as I have taken charge, during the last few months, of an old walnut orchard, in which some of the trees are in very bad shape, from lack of moisture and care, up until a year ago. If there is anything in this treatment, no doubt the results would be much quicker than from any other form of upbuilding we might do.—G. G. C., Montalvo.

The following is the clipping to which our correspondent refers:

"Another investigator has found that sick trees can be cured by injections into their veins, the sap carrying the remedy to all parts of the trees and effecting a cure. His experiments were conducted on apple trees that were apparently dying. One tree absorbed three quarts of medicine by intravenous injection in the course of twenty days and then began to improve rapidly. Leaves came out, buds appeared, and in six months' time many branches grew ten inches in length.

"Another tree, which was dried up and black, took its doses of three quarts in three days and fully recovered. Peach trees also yielded to treatment. The medicines used were mostly fertilizers, such as potassium nitrate in a liquid solution, or a solution of manure; but for some conditions the medicine was simply pure water or a solution of common salts."

[We do not know exactly to whose work the writer of these paragraphs refers, so we cannot go to the original source of the information and therefore cannot form an opinion as to the actual value of it. This much we know about it: It has been demonstrated to be possible to get considerable amounts of liquids into the sap flow by having a container rigged up with a small pipe or hose so that the bulk of the liquid can be brought into contact with the inner bark of the tree or, as we commonly say, "under the bark." The failure of old attempts to medicate trees were probably due to the fact that materials were placed in holes bored into the central wood of the tree. We also know that the material introduced in the sap wood goes very quickly upward, and if bluestone solution is used that way, you can kill the tree. As for feeding the tree with wholesome liquids, at this moment we do not know anything about it, and we have no faith in it as a practical horticultural proceeding. We should still rely upon building up the tree with water, fertilizers and good tillage acting upon the natural feeders, the roots. We should also help the tree by pruning to remove old and to encourage the growth of new vigorous wood. Certainly enough has not yet been done to warrant you in doing more than be watchful to see if the demonstration of the anticipations of the clipping will come. It certainly has now no place in your regular work.—EDITOR.]



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The Layne & Bowler System Has Proven Its Efficiency Many Times Over

—It has undergone the severest of tests, has been tried and tested under every condition and has proven to be the most economical and durable System in operation. The Layne & Bowler System is not only recommended by its many users, but by the leading engineers and irrigators, because it has overcome the irrigator's difficulties and has given perfect service at the lowest possible cost.

A GREATER WATER SUPPLY

—Is obtainable where this System is installed. The Layne & Bowler patent screen eliminates all sand troubles, permits a greater inlet capacity and makes the well more lasting and durable than the ordinary screen. Decide now in favor of the Layne & Bowler System and insure yourself against a water shortage.

Write today for Catalog No. 25, which tells about the development of the Layne & Bowler System and the story of its many successful users. Let the World's largest Water Developers solve your pumping problems.

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San Francisco Office, 508 Kohl Bldg.

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ROCHE HARBOR LIME

excels all other for Spraying. Free from grit. Will not precipitate while in solution. Will not wash off when applied. Universally used for all purposes. Handled by all dealers.

Tacoma & Roche Harbor Lime Co.

Monadnock Bldg.

San Francisco, Cal.

Forkner Orchard Cultivator



Does more work with less draft and leaves a better surface mulch than any other cultivator made.

It Works Right Up To Your Trees

Cultivating the entire surface beneath low branches without disturbing the fruit. Write for catalogue and see book "Modern Orchard Tillage."

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LIME NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of Lime

Send for Free Booklet and Prices

PACIFIC LIME AND PLASTER CO.,

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PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices. We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

AGRICULTURAL REVIEW.

With the Fruit Men.

Two new county horticultural commissioners have been appointed: C. F. Collins, of Diauba, for Tulare county,

"A Stitch in Time Saves Nine"

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

If you will write to us for the booklet "Feed the Soil that Feeds You" it will be promptly mailed, free. It explains that fertilizing is an investment, not an expense.

Western Meat Co.

704 Townsend Street

San Francisco

California

FANCY GRAFTING WOOD

All Burbank's best varieties, including his Standard Prune, Splendor Prune, Pitless Prune, Sugar Prune. Also Imperial, Improved French and Robe de Sargent Prunes, Burbank's Formosa, Santa Rosa, Gaviota and Climax, best shipping plums, Vacaville Plum, the first very large blue plum to ripen, fine shipper. President plum, the best of all late plums. Burbank's Plum cots, a very fine new fruit; also Burbank's Cherry, Early Burbank, Early Chapman and all other varieties.

For prices write.

H. A. BASSFORD, Ulates Rancho, Vacaville, Cal.

ty, and R. Dan D. Sharp, of Arlington, for Riverside.

A number of fruit growers of the Fresno district recently met to organize a green fruit company to handle the output of the members next year.

Convinced that the dried fruit and canning businesses are so closely related that there has been needless competition between them, the Kings County Raisin & Dried Fruit Co. is planning to establish a cannery.

John Burns, of Vernon, Sutter county, had ripe cherries from his orchard for Christmas, also strawberries and fresh vegetables grown in his garden.

Waldo Nail, of Meridian, Sutter county, has harvested a good crop of pecans this year.

Reports from Paso Robles are to the effect that almonds have proved extremely profitable in the district west of town and about 80,000 trees are to be planted this season. Heavy apple and pear planting will also be made.

Nurserymen of Fresno state that there is a heavy demand for trees this year. Thompsons seedless vines are in big demand, and Emperors will be heavily planted in foothill districts. The greatest citrus orders are coming from foothill districts.

During December County Horticultural Commissioner Earle Mills and deputies of Butte inspected 45,100 prune trees, 8504 almonds, 776 apples, 4778 peaches, 100 cherries and 90 pear trees. Windstorms have blown about 10% of the olive crop off the trees.

Commissioner Galloway of Sonoma and Deputy Bremner inspected during December 50,870 prune trees, 2224 peaches, 1043 pears, 1344 apples, 265 nuts, 189 cherries, and 616 assorted trees, also 1162 berry plants.

Commissioner Sharpe of Kings county reports finding a good deal of gum disease in orchards, also much crown or nematode gall in nursery stock during December. Conditions are favorable for an excellent season in the county.

Heavy plantings of cherries are in prospect in the Lompoc valley.

Newspaper reports state that 1350 acres will be planted to almonds and olives on the Ashbrook ranch in Tehama county by Joseph Ball and associates, who recently purchased the above property.

William Swall and family, of Tulare county, have formed the Swall Land Co., which takes over all the Swall property. Fifty acres will be planted this year to prunes, Robe de Sargent and French.

According to estimates of the State Horticultural Commissioner, A. J. Cook, the fruit crop of California is worth \$100,000,000 per annum. The alfalfa output of the 728,623 acres is estimated to be worth \$15,000,000.

The grape growers of Ukiah have completed organization to fight the "dry" amendment to the constitution. F. H. Waugh has been elected president and C. L. Crawford secretary.

With the Citrus Growers.

A strong effort is being made by residents of the San Fernando valley to obtain the School of Tropical Agriculture of the University of California for that section.

The first full car of oranges ever shipped from Lincoln, Placer county, was shipped out last week by I. E. Thayer.

The orange growers of Tulare county finished the season of 1913-14 with 4300 cars shipped, which netted \$1,720,000, or a little better than \$1 per box, less 35c per box for picking and packing. There is a good deal of feeling against the shipping of green fruit.

The residents of the Fair Oaks district have organized the Fair Oaks Growers' Association, which has the purposes of promoting better methods of citrus culture and marketing, and to help secure labor for the groves.

The International Fruit Products Co. has started at Santa Paula to manufacture products from cull citrus fruits. Cull lemons will bring \$12.50 per ton; orange culls will bring \$8 to \$12 per ton. The Citrus Fruit Products Co. at Lodi is still having trouble with its process of manufacture of juice from cull oranges and will not start work January 20 as was planned.

Ten cars of navel oranges were recently destroyed by fire in the wooden building belonging to the Covina Orange Growers' Association, the loss being about \$25,000.

An "emergency convention" will be held at Upland January 30 to discuss ways and means of combatting the mealy bug, which has caused trouble there recently.

About 300 acres of lemons will be planted in Santa Cruz county this year, according to reports.

The Panama-Pacific Exposition has purchased 60 orange trees from Cloverdale, which will be taken to the Fair grounds.

Fresno county is preparing to make a fine exhibit of oranges at the National Orange Show to be held in San Bernardino next month.

The Randolph Fruit Co. has joined the Citrus Protective League.

The California Fruit Growers' Exchange reports an output of 43,000 cars as expected for the coming season, to have a value of \$30,000,000 and up. This is an increase on the earlier estimates and is better, as the period of severe frosts has passed and not much injury is expected from that cause at the worst.

In detail, the figures of the estimate are these:

Total output north of the Tehachapi, 4500 to 5000 cars.

Total output of southern California, more than 38,000 cars.

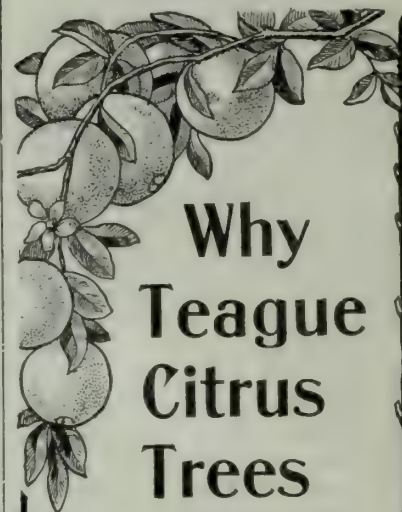
Total California crop of lemons, 4000 cars; navels, 25,000 to 27,000; valencias, approximately 9000 cars; miscellaneous, 3000 cars.

Practically the entire crop in central California has been picked. Up to January 5, 3885 cars of oranges and 19 cars of lemons from Tulare county and 348 cars of oranges from Butte county had been shipped. On the same date 1229 cars of oranges and 261 cars of lemons had gone forward from southern California.

The Raisin Situation on the New Year.

It has been common every new year to take stock of the raisin situation as to amount of stock sold, and on hand, in order to see how the season has been and to forecast the situation when the next crop is ready for the market. This year it is especially interesting to do this, owing to it being the first year for the Associated Raisin Co., and Manager James Madison has issued a circular letter on conditions existing January 1, 1914.

There were on hand January 1, 1913, 39,000 tons, as 26,000 tons were



Why Teague Citrus Trees

Are the Best

THE enormous business of the San Dimas Citrus Nurseries and the fact that we are the largest citrus nurseries in the world, is in itself the best kind of proof that Teague trees are better than others.

Our trees are really pedigreed. We start with the seed—and a great deal depends upon the character of the seed. That is, it must be GOOD seed, for within this seed is the germ of life which will ultimately produce a strong, hardy, thrifty tree—or a weakling. We plant these seeds in the open ground—not in lath houses, and as a consequence have a stronger, sturdier tree—one that will transplant and do well in less favored spots.

When we come to transplant from the seed bed to the nursery row, we often discard 50% of seed bed nursery trees because they are not sufficiently well rooted, or do not show a growth and hardiness that we deem necessary to make a perfect tree. After being planted in the nursery row it means constant, watchful care—irrigating at the right time—frequent cultivation—intelligent pruning. Vigilance is exercised to see that they get no set-back.

As a consequence, Teague trees when removed and planted in orchards show for themselves in their rapid growth and development. Compare a Teague orchard with any other and note the difference.

Write for Catalog

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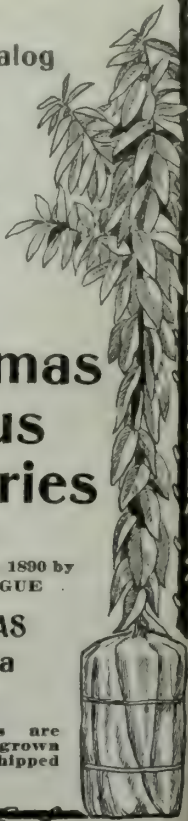
—giving valuable information about citrus culture. Tell us what your probable requirements will be and get our quotations.

San Dimas Citrus Nurseries Inc.

Established in 1890 by R. M. TEAGUE

SAN DIMAS California U. S. A.

Teague Trees are started right, grown right, and shipped right.



shipped the first nine months of the year and 13,200 tons were on hand October 1, 1913. Of this, 7500 tons are still unsold.

From the 1913 crop there are on hand 25,500 tons, or a total of 32,500 tons of old and new raisins. This will be reduced by selling 4000 tons of inferior stuff (Feherzagos and others) to the distilleries for brandy making, which will reduce the amount that has to supply the market and make a possible carry-over to 28,500 tons. In this amount there are approximately 2000 tons of old packed four-crowns and Muscat Seedless raisins that will be disposed of in the same way if not sold to the trade. There is thus available about 10,000 tons less of raisins than were on hand on the new year 1913.

The company is sold out of both Thompsons Seedless and Sultanas, although there are several hundred tons bought by packers but not shipped.

It is also stated in the letter that during the last four months of 1912 there was shipped out of the State about 73,000 tons of raisins. During the four months of the year 1913 the shipments will not exceed 45,000 tons (December shipments not yet available). Therefore the quantity of raisins in the hands of the trade must have been very much greater during the spring months of 1913 than what it can possibly be now.

Apparently, therefore, the company has not only gotten excellent prices, but it has left the industry in better shape than it was the year preceding. The company has decided to change two of its plans. The difference in price of 1912 and 1913 raisins is to be kept, not removed, and private labels will be permitted for private brands of raisins.

Poultry Progress.

At the close of the tenth month of the Napa County Egg Laying Contest the Buff Wyandottes of W. H. Pearson were still ahead with 796 eggs, Blom & Son's White Leghorns, the former leaders, second with 751 eggs, and Wallace Rutherford's White Rocks third with 699 eggs. The latter laid 21 eggs for the month. The top pen for the month was the Buff Orpingtons of D. L. Beard which laid 33 eggs, against 22 for the nearest competitor. The pen has, however, had only 524 eggs for the ten months, so can hardly show among the winners.

The first annual Porterville Poultry Show proved a great success, the Rocks particularly coming in for a great share of admiration. There were 275 entries and the attendance was large.

A Citrus Fair is to be commended with the Fresno poultry show next December, according to plans now being formulated.

The Sonoma County Poultry Producers' Federation has begun a fight against the dog-muzzling ordinance recently passed. Bids for handling the egg output for the coming season were also received, though none have been accepted at date of writing. A pamphlet on co-operative enterprise is to be printed and circulated.

If ostriches are poultry, the fact that 46 ostriches for the Tracy ostrich farm near Bakersfield were recently purchased deserves mention here. The birds are of three varieties and were purchased in California. They will be kept on alfalfa. One bird swallowed a diamond from a ring while being taken to the farm.

The Arlington Poultry Association

of Riverside has elected the following officers: President, L. H. Edmiston; first vice-president, W. G. Suits; third vice-president, Lloyd Jones; secretary, George Sinclair; treasurer, W. C. Penrod.

Officers of the Santa Clara County Poultry Association recently elected are: Charles Weeks, president; Miss Alice Wickwire, first vice-president; Dr. James B. Bullitt, second vice-president; Charles Emery, secretary; H. M. Billings, treasurer; Charles R. Harter, show secretary. The association has severed connection with the San Jose Kennel Club, but will hold the next show jointly with the latter organization.

Officers of the Cotati and Penngrove Poultry Producers' Association recently elected were: President, J. L. Dinwiddie; vice-president, Fred Clark; secretary, H. M. Baily.

Would Save Giant Grape Vine.

The famous grape vine at Carpenteria, Santa Barbara county, which has been known as the largest grape vine in the world, will soon be a thing of the past unless steps are taken to save it, according to present indications, and it is urged that the county purchase the acre and a half on which it stands and do what is possible to renew the vitality of the plant. As it is only 60 years old and vines live far beyond this age, it seems probable that the vine can be saved.

What is needed is careful work by a tree surgeon to cut out diseased tissue and to prevent further spread of the disease, better irrigation and cultivation and care generally, and probably spraying to eradicate various fungous pests and to stimulate growth generally. It is believed by experts that in these ways the life of the vine can be prolonged many years.

Odds and Ends of News.

Tree planting other than for fruit is being stimulated by the good rains. A. C. Bowles is putting in 50 acres to eucalyptus north of Vacaville. William McCracken, a neighbor, has secured an excellent growth on nearly 200 acres to these trees planted in 1911.

The Solano County Exposition Commission calls upon Solano county residents to line their county roads with shade trees, to beautify the county.

In parts of Riverside county some systematic highway tree planting is also being done.

Camphor trees grow in California, and plantations for camphor manufacture have been suggested. It is stated that such a plantation is a success in Putnam county, Florida.

Organizations of various kinds are moving in California. The San Joaquin Valley County Exposition Association has been organized with George C. Roeding, president; John P. Irish, Jr., vice-president; W. C. Maloy, second vice-president; J. B. Johnson, secretary-treasurer, and C. H. Edwards, manager. The association will work for the interests of the San Joaquin valley at the 1915 exposition.

The Tulare County Beekeepers Association has elected as officers: President, B. F. Lawless of Visalia; vice-president, Louis Sinn, of Dinuba; secretary-treasurer, C. W. Tompkins, of Tulare.

The alfalfa mill at Dixon has prospered so that its capacity will be doubled for next season.

A new book that tells you how to care for and feed YOUR CROPS

It's Free

WE have recently issued a book entitled "The Care and Feeding of Crops", written by P. L. McCreary who was for five years chemist in the fertilizer department at the California Experiment Station and for three years engaged in soil and water work for the United States Reclamation Service.

Mr. McCreary has made a thorough study of Pacific Coast soil conditions and is an expert on fertilizers and fertilization.

Do you know that a big crop draws out of the soil practically all of the available plant food and that it takes two years or more of weathering action to put the soil into a condition so that plants can get the necessary food from it? Do you know that there are ways to get a big crop every year?

This book illustrated with remarkable photographic reproductions is written so that you can understand every word of it. Every page will give you valuable practical information. You can't afford to be without it. Write for it today. A postal card or a letter will bring it to you absolutely without any obligation on your part.

The Pacific Guano & Fertilizer Co.

803 SECURITY BUILDING

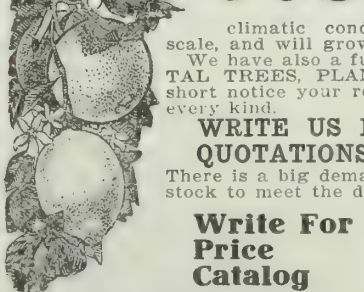
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MAKERS OF THE FAMOUS GAVIOTA FERTILIZER



CITRUS TREES



If you are figuring on planting citrus trees of any kind or in any quantity this season, you will do well to get in touch with us early and let us quote you on your probable requirements. We have a magnificent stand of nearly all the best varieties in

LEMONS AND ORANGES

Our stock is grown under ideal soil and climatic conditions—strong and thrifty—free from scale, and will grow true to name.

We have also a full line of DECIDUOUS AND ORNAMENTAL TREES, PLANTS, VINES, ETC. We can supply on short notice your requirements for nursery stock of almost every kind.

WRITE US FOR QUOTATIONS ON OLIVES

There is a big demand for olives, but we have as yet a fine stock to meet the demand with. We suggest, however, that you get in touch with us immediately. We pack and ship in perfect order, and guarantee safe delivery.

Write For Price Catalog

Roeding and Wood
NURSERY CO., INC.

Our complete descriptive price list, covering all varieties of trees and plants, is now ready and will be mailed free on request.

1617 E Washington St. Los Angeles, Cal.

Grafted Walnut Trees

Placencia Perfection
Nell's Prolific
and Eureka

IF YOU WANT FINE BIG TREES ON BLACK ROOTS, STRICTLY TRUE SELECTED STOCK WRITE FOR PRICES.

McMILLAN CITRUS NURSERIES,
221 North Curtis Avenue, Alhambra, Cal.

HALF MILLION SEED BED STOCK FLORIDA SOUR ORANGES AND GRAPE FRUIT

Strong, thrifty one-year-old stock, eight inches and up.

Also fine line pedigreed stock of Eureka Lemon, Navels, Valencias, Marsh Seedless Grape Fruit and Mission Olives.

T. J. WALKER NURSERIES, San Fernando, Cal.
(Established 1895)

The World's Meat Supplies.

By H. A. JASTRO, President of the National Live Stock Association at the Banquet of the California Breeders Association in San Francisco, Jan. 10.

I do not deem it essential to make any extended remarks about the conditions prevailing in the live stock industry in this country, for the simple reason that they can be affected adversely only by an oversupply in those foreign countries that are supposed to have a surplus of meat food products.

In other words, if the surplus in foreign countries becomes too great to be absorbed readily by England, naturally their products will be attracted to the United States by free trade, but if similar results follow in the live stock industry, as was the case when hides were put on the free list, then we have nothing to fear from foreign competition in our line, because, as you well know, immediately after hides were declared free, so far from attracting foreign hides the exact opposite was the result, for the reason that the price of the foreign hide was raised, to prevent those countries from being drained of their heretofore cheap hides into our country.

Even conceding that prices in foreign countries do not advance, which is a remote possibility, the only question to be considered is the condition of the live stock industry in the surplus countries, and I can do no better than to enumerate some statistics, which I trust will not prove too dry to interest those present, as I believe they will dispel some of the forebodings of many of the high-tariff pessimists now engaged in the live stock business.

CANADA.—The number of beef cattle in the Dominion of Canada has gradually fallen from 4,600,000 in 1908 to 4,100,000 in 1912. During the same period Canada's exports of cattle diminished from 151,000 to 61,500, while her exports of beef fell from 2,250,000 pounds to 948,000 pounds. Canada's cattle were shipped mainly to the United States, while her beef is sold in the United Kingdom. The number of head of all kinds of live stock in Canada is about the same per capita as in the United States—namely, one and three fourths. The conditions in Canada are favorable for the enlargement of the live stock industry, but not any better than in this country. Western Canada has been settling up very fast, the settlers are raising grain and other crops—the same as in the northwestern part of the United States. That accounts for the decrease in live stock there, as it does in this country. Owing to the drouth in Eastern Canada last year there was heavy movement of feeders into this country immediately after cattle went on the free list. That was exceptional, and not likely to be repeated in many years. The probability is that in the future the United States will supply Canada with about as much live stock and meat products as she will furnish to us. The removal of the tariff has resulted in an increase in the price of live stock in Canada, as I predicted would be the case, and Canada is already protesting against the increase in the price of meat food products.

MEXICO.—Ever since the beginning of the revolution in Mexico owners who were able to gather and ship their cattle have been sending them

to the United States. The importation of cattle from Mexico for 1913 will exceed 300,000 head—the largest number in our history. Many of these cattle paid not only an import duty to the United States, but an export duty to the federal government in Mexico, and sometimes tribute to the revolutionists as well. Mexico has a population of 15,000,000 and is estimated to have between 6,000,000 and 7,000,000 cattle, 4,000,000 sheep and 750,000 swine—less than one meat animal per capita. There is an immense territory in Mexico available for producing cattle, and, with stable government conditions that country can be relied on to supply a large number of unfinished, or stocker, cattle. When the revolution is settled, it will take several years for normal conditions to be restored, and until then we can not reasonably expect to receive as many cattle annually as were shipped here last year. After the war there will be a keen demand for feeding stock in order to build up the herds to a better standard and this country will probably be called upon to supply that demand. The removal of duty on live stock will not have the slightest effect toward increasing our imports of cattle from Mexico, or reducing prices here. Her surplus supply would have continued to come here and paid the former duty. Now that the duty has been removed it will be absorbed by the cattle owners of Mexico; or, what is more likely, the Government of Mexico will retain the present export duty. Thus the placing of live stock on the free list will not have any effect on the price of Mexican cattle in this country.

ARGENTINA.—Argentina, with a population of about 7,000,000 has one-half as many cattle as the United States, 29,000,000 more sheep, and only 3,000,000 swine, as against our supply of 60,000,000 swine. For each inhabitant there are about four cattle, and including all meat animals about seventeen head, compared with one and three-fourths for each person in this country. Argentina now exports more beef than all the other nations combined. For 1912 her exports of meat products, mostly frozen meat, amounted to approximately 1,000,000,000 pounds. In 1911 she exported 261,000 head of live cattle, and 105,000 head of sheep. It is more than likely that her exports of live cattle will be discontinued on account of the foot-and-mouth disease. Prices of live stock in Argentina have practically doubled within recent years, and this advance has attracted to the block all classes of cattle.

AUSTRALIA.—Next to Argentina, Australia has the largest surplus of meat. That country has about 12,000,000 cattle, 83,000,000 sheep and 850,000 swine. Her population is about 3,800,000 which gives an average of three cattle, and twenty-five meat-food animals of all kinds per capita. The latest available statistics show that Australia exported, during the year ending June 30, 1913, about 350,000,000 pounds of frozen beef, mutton and lamb. Her exports of meat products average about one-third of those of Argentina. Up to the present time practically all of the exports of meat from Australia have been frozen. They are now preparing to handle chilled meat. Under favorable conditions Australia can sup-

Bulls For Sale

60 HEAD SHORTHORN BULLS

Highly Bred, Well Developed
Individuals in Good Condition

This bunch contains 3 registered bulls in every way fit for
herd-headers.

PRICES RIGHT

For further particulars enquire

ROSELAWN STOCK FARM

Phone 2662

WOODLAND, YOLO CO., CAL.

T. B. GIBSON, Owner.

Belgian Stallions

Have for sale Bay 4-year-old, weighs 1950 in ordinary condition; took first premium at 1913 State Fair; his dam imported mare Rosebud, weighs 2318 lb.; took first premium and gold medal sweepstakes at 1913 State Fair.; sired by imported stallion Derby. Have at my place 30 colts by this stallion. A proven sure getter of fine foals. Also a sorrel 3-year-old, weighs 2000; will weigh 2300 when mature. His dam imported mare Lizzie de More; took second premium at 1913 State Fair as an individual; first premium as mare and colt, and first for mare and two colts under 4 years; sired by Derby. Prices reasonable and will make terms that will allow purchaser to earn good part of purchase price with the stallions. Call at my place and see these fine young stallions and their get.

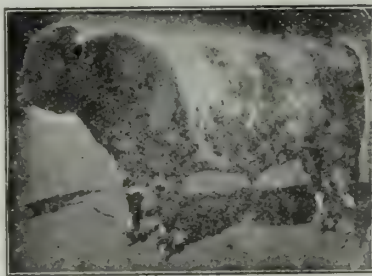
H. L. WEST, Hamilton, Cal.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.

Breeder of

SHORT-HORN CATTLE
SHROPSHIRE and
MERINO SHEEP



KING LANCASTER, Son of King Edward,
only three-time Grand Champion at California State Fair.

Have for sale some choice
range-raised bulls sired by
King Lancaster, Knights Perfection and Bapton Broadhooks
III. Single or car-load lots.

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

A. W. MORRIS & SONS CORP.

Holstein-Friesian Cattle

Woodland, Cal.

HOPLAND STOCK FARM

Breeders of Registered Short-horn Bulls ready for service, fit for range or otherwise. Shropshire Sheep and Berkshire Hogs. Hungarian Ponies, Saddle or Harness. Prices on application. HOPLAND, CAL.

ply a much larger volume of meat products for export.

NEW ZEALAND.—New Zealand has also a relatively large surplus for export. Her population is only about 1,350,000, while latest statistics credit her with having 2,000,000 cattle, 24,000,000 sheep and 350,000 swine. She thus has about one and one-half head of cattle, and about twenty head of all food animals per person. During 1913 she exported approximately 260,000,000 pounds of frozen meat, of which 90 per cent was mutton and lamb. The time occupied in passage from New Zealand and Australia to San Francisco is about twenty-two days, as compared with forty days from the same countries to England. On the other hand the transportation facilities from South America are better to England and the continent than to this country, all of which should be taken into account.

There are a few other countries with a surplus of meat products, such as Denmark, but their exports are not likely to increase.

Classified according to the kind of exports Argentina leads in beef, with Australia second. In mutton and lamb the exports from New Zealand are greater than from any other country, with Australia and Argentina contending for second place. The United States exceeds all the world in the volume of its exports of hog products.

In order that you may have a clear understanding of the meat situation in the world I will now briefly refer to the condition in the United States, for you must not lose sight of the fact that this country is still raising a surplus of meat food products. The United States has today a population of 97,000,000, and approximately 61,000,000 head of swine, 56,000,000 cattle, and 51,000,000 sheep. According to the estimates of the Department of Agriculture this is a reduction compared with 1900 of 1,700,000 swine, 11,800,000 cattle and 10,000,000 sheep, while the population has increased about 20,000,000. From these figures you will observe that in this country there are about one and three-fourths head of live stock per capita, compared with about the same number per capita in Canada, less than one in Mexico, seventeen in Argentina, twenty-five in Australia, and twenty in New Zealand. Exclusive of semicivilized countries, the population of the United States is about ten per cent of the people of the world who raise domestic meat food animals and consume them for food. We have within our borders about sixteen per cent of the meat-food animals of the world—vastly more per capita than the average of all civilized countries. For the period from 1897 to 1909 the total value of our exports of meat animals and meat-food products averaged annually from \$200,000,000 to \$250,000,000—about one-seventh of our total production. For 1913 our exports of these products will amount to approximately \$150,000,000 (mostly pork products).

I can not better describe the world situation as to live stock and meat exports than by the simple statement that the total value last year, at the ports of shipments, of all the meat animals and products exported from all the surplus countries of the world, except the United States, was less than the total average value of the meat-food animals and meat-food products exported from this country during the period 1897 to 1909, and by the further statement that the total value

of all the exports of meat animals and meat products last year from all the surplus countries to which I have specifically referred was but little more than the value of our exports of these products. For the past year the United States exported a trifle more than 1,700,000,000 pounds of meat animals and meat-food products, including lard and other by-products of the packing house. While this is a smaller volume than the meat exported from Argentina, Australia, and New Zealand, its value was greater than that of the meat exports of those countries combined. The total value of the products of the slaughtering and meat-packing industry of the United States is estimated at \$1,600,000,000. Deducting the value of exports of these products last year leaves \$1,450,000,000, which is the approximate value at wholesale of the meat products consumed in this country. With meats and live stock on the free list I do not believe the value of the meat-food animals and meat-food products likely to be imported into this country during 1914 will exceed \$25,000,000, or less than two per cent of the value, at wholesale, of our domestic consumption. It more likely will be under than above that figure.

In considering the probable volume of our imports of meat products there are several factors which should be taken into account. First, a large part of the meat exported from Argentina, Australia, and New Zealand is frozen, and there is a prejudice against frozen meat in this country. Our butchers have no adequate facilities for handling it, and the surplus countries are not prepared to ship their products in the chilled condition. More important than this, however, is the fact that, with our competition added to that of the rest of the world, it is likely that the prices in other surplus countries will be so advanced that it will not be profitable to ship to the United States. The rest of the consuming world needs the meat that can be supplied by Argentina, Australia and New Zealand, and will pay more for the same than we can.

I probably should apologize for devoting so much time to this subject, but I am anxious to impress upon you the fact that the removal of the tariff on our products ought not to appreciably injure the live stock industry, and to assure those now in the business, and others intending to embark into it, that the projects are excellent for a continuance of substantially the present basis of value. Prices will fluctuate up and down, but they will not long remain below the present level.

TO TELL HOW TO FATTEN CATTLE.

At this time more interest is being manifested in the feeding of beef cattle than ever before in the history of the State, due very likely to present high prices of meat and the need for more live stock in many of our large alfalfa sections.

In order to be in a better position to give reliable data on the subject the Animal Husbandry Division of the University of California and two of the largest live stock companies of the Pacific Coast are now carrying on extensive experiments along that line.

One set of experiments, in which sugar-beet pulp is the base ration, is being carried on at the Bloomfield ranch of Miller & Lux at Gilroy. Here four carloads of steers are being ex-

perimented with. Different amounts and combinations of roughage, including alfalfa, barley, and rye grass hay, are being fed in conjunction with beet pulp, with a view to determining which of the rations may be most profitably fed.

The more extensive experiments are being conducted at the feeding station of the Western Meat Company at Lovelock, Nevada. Many thousands of head of beef cattle have been fattened annually at this feeding center, but in the past alfalfa only has been fed, and the results have been considered satisfactory. With the upward trend of prices of meat, however, the question of the advisability of feeding grain in connection with alfalfa has become a live one, and this year for the first time grain is being fed by the Western Meat Company. The work is being conducted experimentally and in cooperation with the University of California, whose representative is in charge of the weighing of feed and cattle and the keeping of the records of the work. Six lots of steers averaging 225 head each are being fed on different grain rations. Corn, barley, cottonseed meal, dried beet pulp, and Sperry feed are being fed to the various lots, and for comparison other weighed lots are getting alfalfa only. In one case the hay is fed long and in another it is chopped.

It is seldom that it has been possible for an institution to take part in such

extensive experimental work as this and the results are being anticipated with great interest. That the new status of the meat market of the country will call for improved methods of feeding on the Pacific Coast is a foregone conclusion. That these experiments may help to blaze the way is hoped.

The University has a representative at each of the feeding stations named. Young men who have graduated from the University of California and who are demonstrating their ability to do things are handling the work.

GRASSES FOR DRY LANDS.

To the Editor: What would be the best seed for forage on worn out hay land? Is orchard grass good, or bur clover? The soil is dark brown with a mixture of gravel and is two feet deep and beneath is a yellow clay 80 feet deep to water gravel.—J. W. L., Napa Junction.

[We have answered this question many times. We know no grass which will live through the dry season on dry uplands. Orchard grass will bunch up and carry through in the root, if the land has some summer moisture. Bur clover is an annual; a good winter grower giving plenty of winter pasture and plenty of seed for dry feed and to come again with during the next rainy season.—EDITOR.]

America's Leading Horse Importers



PERCHERONS

Our recent importation arrived at our Oakland Stables December 13th. At the International Live Stock Exposition, Chicago, December, 1913, our stallions won two Gold Medals; two Championship Ribbons; two Second Prize Ribbons. There were over 600 Percherons at this great show.

If you want the best, let us hear from you.

McLAUGHLIN PERCHERON COMPANY

Kansas City, Mo.

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Going East For Live Stock

Have now orders for thirty (30) head of high-class registered Holstein cows, part to be A. R. O.

Will visit the great Holstein center of New York.

Now is your opportunity to secure live stock to strengthen your herds and flocks for the Panama-Pacific, and have them ready to do their best in 1915.

Write me your wants or call and see me.

W. M. CARRUTHERS,

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San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

HEREFORDS

We offer for sale 40 head pure-bred Hereford Bulls. Short Yearlings.

DAVID JACKS CORPORATION, Monterey, Cal.

No Draft Horse Association.

The draft horse breeders of California may be interested in the formation of a draft horse breeders' association, but if they are, they don't seem to give any indication of the fact. There have been several letters sent to Mr. Bond of Newark and to the PACIFIC RURAL PRESS, saying that the writers wanted to see such an organization formed and would support it, but there have been too few to encourage going ahead with the work. The matter simply stands that if enough men do write in or otherwise show that they want things to be better in the draft horse business, such an association will be organized and until they do, it will not be. This decision was reached at a conference the day of the Live Stock Breeders Association meeting in San Francisco. From the letters that were received strong interest would appear to exist, but that don't help unless such interest is known. If many other horsemen feel as those do who wrote in, such an association ought to be a big success, and the troubles of one breeder are sure to be much like the troubles of another.

The expenses of an association would be extremely small. Membership to carry weight in whatever objects an association would have in view is the main thing. It is commonly known that individuals can ask for rate reductions on the railroad until they are black in the face and be utterly ignored, while an organization of any kind can get a considerate hearing the first rattle out of the box. It is just the same in legislature, State Fair or anything. The horsemen can put up with and enjoy all the unfortunate conditions in the draft horse business until they organize and when they form an association with live officers they can get after any trouble that could in any way be remedied and it will at least be partly remedied.

The dues of such an association need certainly not be more than \$1 per year, and could quite surely be less than that if enough would come in. We have in California approximately 790 draft stallions of the four leading breeds. There are not as many owners, but with stallion companies there are many more men with a financial interest in draft stallions, and many more still are interested through owning mares and raising draft geldings. We certainly have enough to get a fine set of officers and to get every reasonable thing we go after.

We should and could make the State Stallion law doubly effective by having the State Veterinarian's deputies, instead of independent veterinarians, examine stallions for soundness, and see that no unsound stallions certified as sound, as they are now, in cases where a veterinarian will oblige a good customer.

We could get better conditions at the State Fair, the greatest single educational agency in the draft horse business in California, and the thing that will encourage better breeding and better animals if properly handled, and we could prevent horses from being shown, as they have been, that the State law declares are unsound and unfit for service.

We could see that a better class of animals were brought to the State and better selling methods of the animals after they were raised and help things along generally.

They say that horsemen never will get together. 'Each one for himself, and the devil run the business.' Mr. Bond says that dynamite wouldn't budge them, but to keep talking about the subject and finally something will be done. So we will keep talking, will welcome ideas on the draft horse business and needs, and when enough people say that they will help to justify going ahead, an association will be formed.

BREEDERS' SALES.

[This column is open to pure-bred breeders of all classes of live stock, and is run as often as we have a sufficient number to warrant the space. Those having made sales are requested to send us the name of the animal, registration number, and name and address of purchaser. When such sales are reported we will gladly give them mention free of charge. The following sales have been reported since our last issue containing this column.]

BERKSHIRE HOGS.

A. H. Brinton, Woodland, sold to Hawaii Meat Co., Honolulu, Peggy Queen 10th, 185509, and Peggy Queen 11th, 185510; to J. J. Yerguson, Davis, boar Glorietta's Combination 3rd, 176910; sows, Polly Queen 5th, 136685, Peggy Queen 4th, 163938, Peggy Queen 8th, 174142, Peggy Queen 9th, 174143; to Louis Titus, board Brinton's Combination 5th.

Charles Goodman, Williams, sold to Prof. F. G. Krauss, of Honolulu, boar Homestead Duke 5th, 184909; to J. Singleton, Colusa, boar Pennwood Duke 2nd 184908; to Ana Mac Ranch, Delano, gilt Queen Delano 184910; to E. C. Deering, Santa Cruz, Santa Cruz Chief, 184907; to R. C. Rahm, prize boar Rahms Choice.

DUROC HOGS.

John P. Daggs, Modesto, sold to B. D. Mason, Willets, 2 sows; to Western Creameries, Benicia, 4 sows and 3 boars; to Antonia Costa, Modesto, 1 boar and 2 sows; to R. H. Davis, Modesto, 1 boar; to F. Signorotti, Modesto, 1 boar; to Elmer Lamb, Ceres, 1 sow and 1 boar; to J. G. Brewen, Woodland, 1 boar; to W. E. Tong, Modesto, 1 boar; to N. J. Phillips, Modesto, 1 boar; to M. T. Mills, Visalia, 1 boar; to H. V. Traynham, Arbuckle, 4 sows and 1 boar; to H. H. James, Redding, 1 boar and 2 sows; to E. B. Vann, Yolo, 1 boar.

J. K. Fraser, Denair, sold to D. B. Peters, Los Angeles, 5 bred sows, Red Gladys 363548, Perfect 369782, Lassie I Am 369784, I Am Perfection 368782, Topsy 362120; to E. Tornell, Turlock, boar King Scott Again, 140847; to Jack London, Glen Ellen, boar Victor Dee 126987.

HOLSTEIN CATTLE.

K. W. Abbott, Milpitas, sold to A. B. McClaughry, Arcadia, heifers Moorland Valnetha Creamelle, Mechthilde Louise of Riverside 2nd, Ida of Bloom 2nd, Lily of Bloom 2nd, Riverside Princess De Kol 2nd, Korndyke Gipsy Queen, and Korndyke Sharon Buttercup, also the bull Lirania Lyons Butter Boy.

FARMERS FATTENING BEEF CATTLE.

At the meeting of the California Live Stock Association last week, frequent reference was made by speakers to the necessity of more small farmers

engaging in the work of feeding and fattening beef cattle for the market. The shortage of beef and the consequent high prices and the prospect of an overabundance of alfalfa and other feed makes this new industry for California appear in an attractive light.

In a conversation with Jas. H. McCord, the veteran stock man of Hanford, at the meeting, he endorsed the beef feeding proposition which was printed in this journal a few weeks ago, saying that it was entirely feasible and logical. He stated that with good grade, beef type of cattle, alfalfa could be fed at a profit and return \$8 and \$10 per ton on the feed. He thinks that a profitable business can be worked up by some one in going over the range districts and securing good stock to supply the small farmers, and that in order to facilitate the work the local banks should be prepared to furnish money to farmers to buy the stock provided they had plenty of feed to fatten them. This method of financing stock deals has long been the custom in the central states.

The annual meeting of the Placer Growers' Canning Association has been held and as officers there were elected: A. Fereva, president; L. J. Kenney, vice-president; W. D. Ingram, secretary. A long run of the cannery is expected next year.

SWINE.

CHOLERA IS IN THE STATE! Do you want it? For immediate sale, University Immuned prize-winning Hampshires, F. O. B. Martinez, crated and papers. Two-year-old boars, \$35. Three 6-month gilts, \$25. Two 7-month gilts, \$35. One-year-old gilt, \$45. Butcher offers \$35. Address J. W. Henderson, First Nat'l Bank, Berkeley, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog all ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm, W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

FOR SALE—35 head of registered and grade Jersey dairy cattle. Inquire of H. V. Traynham, College City, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Ramboulllets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Ramboulllets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH, property of Mr. and Mrs. E. C. Rand—Fine young Berkshire boars for sale, March farrow. Route 3, Box 69, Santa Rosa, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

With the Live Stock Men.

All of those attending the live stock meetings held in this city last week agreed that the outlook for feed the coming season is better than it has been for a long time in all parts of the State. Fred Ellenwood stated that the season so far in the Red Bluff section had been rather cold and as a result the feed had not grown much but that sufficient rain had fallen to insure a good season. Chas. Kimball, of Hanford, reported that the feed in that section was extra good for this time of the year.

An opportunity such as is seldom offered dairymen at this time of the year will be found in another column of this issue where an announcement is made that the grade Holsteins owned by the Jersey Farm Dairy, at San Bruno, San Mateo county, are for sale. This herd, while not registered, is highly bred as registered bulls have been used to head the herd for a long time, and coming at this time of the year when dairy stock is hard to find, they should be cleaned up in a short time.

A report from Hollister, San Benito county, states that Ben Sepulveda, foreman of the McCreery ranch, has purchased 600 head of Mexican cattle to stock up the ranch with. He stated that there were 150 buyers at Nogales while he was there.

The dairy cow auction held on the ranch of George Cressey, near Modesto, last week was very satisfactory from a price standpoint, an average of \$98 a head having been paid for the 66 cows sold. The high cow sold for \$160.

A number of Tuolumne county cattle men left last week for the Mexican border in search of cattle with which to stock their ranges. They stated that they could use 2000 head if they were obtainable as the feed in the vicinity between Cooperstown and Chinese Camp is several inches high and far in excess of what it has been in former years.

Reports from Woodland state that a large dairy will be started at that place to be known as the Woodland Farm and Dairy Company. If started, the new firm will only do a wholesale business.

A carload of Australian beef is to be sent to Bakersfield at an early date. It is thought that there will be considerable reduction in the prices that now hold sway.

One of the largest deals made along live stock lines the past month was the selling of the Mercier ranch, also the pure-bred Holstein cows and Percheron horses to Dr. A. E. Stellar, of Los Angeles, who is said to be a Holstein enthusiast. As the ranch is one of the finest in the county and as the cows are of high quality, the new owner should be able to make great headway with the undertaking.

It is said that several sheep ranches in the Two Rock section near Petaluma have been raided recently by unmuzzled dogs, and as a result a number of sheep have been killed.

A report from Oroville stated that a number of hogs owned near that place were drowned by the recent high waters in that vicinity.

The Petaluma Co-operative Creamery Company began operation last week at their new plant in that town.

A new cream station is to be erected at Gridley, making a total number of three such places for that town.

Luther Anderson was the first cattleman to take his stock into the hills adjacent to Porterville, when he drove something like 200 head back last week. The grass is much higher now than it has been for several seasons and a good year is expected.

Jacob Reitz, of Humboldt county, recently purchased the ranch of J. D. Voss near Modesto, which will be turned into a dairy at once. There are 80 acres in the place, which sold for over \$25,000.

In his monthly report as County Live Stock Inspector Frank Griffith reports that there has been very little sickness among the animals of Kings county during the past month and no unusual disease or contagion.

Reports from Hermosillo, Mexico, state that it is predicted that within a short time there will be no stock for sale in the State of Sonora. It is said that within the past few weeks large amounts of live stock have been shipped and that cattle buyers from all over the country have been on the ground.

A new milk ordinance will be passed by the city of Merced at an early date, which will regulate the sale and distribution of milk in that place.

The cows and heifers sold at the auction held on the Dickerson ranch near Ceres, Stanislaus county, last week brought an average price of about \$72.50.

The largest receipts of cattle, hogs, and sheep received since the beginning of the Portland Union Stock Yards was reported for one day last week. Cattle values were spotty, the medium to choice beefs averaging from \$7.45 to \$7.70, with prime stuff somewhat higher. Killers have a good sized surplus on hand. She stuff was short, heifers are firm and bulls and stags found quick sale. The trade has absorbed the supply of swine, the bulk of prime light hogs selling from \$8 to \$8.10. Both mutton and lambs sold higher, prime wethers going from \$5.50 to \$5.60, ewes at \$4.25 to \$4.50 and lambs at \$6.55, with an unsatisfied call for fancy stock at that price.

An auction sale of the stock of the Vernalis Farming Company, 12 miles south of Tracy, was held last week by B. A. Rhoades, of Rhoades & Rhoades, auctioneers. There were sold 150 to 160 head of horses and mules, 30 cows and 60 hogs, prices being good all along the line. Mules brought as high as \$500 per span, and mares \$560 per span. All were simply good ranch stock. The cows were simply good quality grades and met a good demand.

Stalder Bros. of Riverside have started building up a large herd of pure-bred Holsteins. Their dairy has always been known for its excellence and recently it was decided to take the last step in improvement by disposing of all the grades and keeping pure-

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PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.

bred stock only. At the last State Fair one of the best bulls for sale by A. W. Morris & Sons was purchased and for the cows, purchases have been made from quite a number of the best herds in the State.

Large cattle shipments are reported as having been received at Paso Robles during the past month, there being over 9,000 head received one day last week from Nogales, Arizona. Over 40,000 head were received at Santa Barbara last week and distributed on the different ranges.

J. W. Bashor, of Ceres, Stanislaus county, recently purchased three head of registered Holstein cows from J. S. Rhodes, of Modesto, and also a registered bull from Dr. Lutz.

A meeting is to be called February 27th by the University of Nevada to organize an association of dairymen in that State.

Paul G. Redington, supervisor of the Sierra National Forest, states that he has just received authorization for the grazing of 16,000 head of cattle and horses and 1000 head of hogs for the season of 1914. He advises all those desiring permits to send in their applications at once. The same season and fees will be in vogue that were used last year.

Henry Wheatley, of Napa, writes: "Mr. Thos. Williams, of Bishop, Inyo county, has bought from the Salvador Stock Farm, of Napa, the two-year-old Shire stallion, Raithby Rajah. This horse was champion at the California State Fair in 1913 and is undoubtedly one of the best Shire stallions ever imported into California."

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Correspondence and inspection of stock invited.

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Phone 131.

It is reported that the Orland creamery is turning out 1000 pounds of butter daily at the present time and that there are 1500 head of cows supplying milk for that creamery.

The recent floods in the Sacramento valley carried off horses, sheep and cattle valued at close to \$10,000 belonging to farmers near Hamilton City, Glenn county.

Two dairymen were fined \$25 each in Modesto recently for having conducted unsanitary plants. The charges were made by C. A. Starkweather, State Dairy Inspector for that section.

A Profitable Dairy in One Year.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Dairying offers as great, if not greater, opportunities to the man who is desirous of receiving quick returns than most any other line of farming that one can take up in any of those sections where alfalfa growing is possible, and while this applies to the man with a small amount of capital it also applies to the man who has sufficient capital to develop his ranch in the quickest possible time.

An instance of what can be done in one year's time where there is sufficient capital may be seen on the ranch of C. T. Kitt near Denair, Stanislaus county.

Our first visit to this place was in April last year, when we found ten acres of alfalfa planted, a small shed that was used for a barn, a chicken house, a combination tank house and residence and 30 acres of grain land that was being leveled and checked for alfalfa. At that time F. A. Lowden, who has the place leased, told us that he intended starting a dairy, but we had little idea that in less than a year's time the ranch would be on a paying basis such as we saw during the month of December.

In developing this place for dairy purposes the first requirement was thought to be plenty of feed and as alfalfa was to be the main feed used, steps were taken to get the land in shape and seed a sufficient amount of it to insure hay during the first season.

Accordingly 30 acres were selected which could most easily be leveled and after scraping, it was seeded with a nurse crop of grain. As soon as that work was accomplished the building of a hay barn, milking barn and milk house was started.

Concrete was selected for all buildings so far as its use was possible and the result has been that permanent and sanitary buildings are a noticeable feature on the place.

This is most noticeable in the milk house, where a great deal of thought was given to make it sanitary and easily cleaned. This building is 12 feet square with a hip roof.

Good ventilation is provided by having three good-sized windows, one of which is used for airing the separator parts. This is done by building a small shelf on the outside of the window, which is enclosed with a screen, making the opening fly tight. By having this arrangement it is possible to have the parts out in the sunlight and still keep them away from the flies.

The floor is made of concrete with a drain which leads to a cesspool some distance away. The side walls are made of concrete to a height of four feet, being six inches thick at the base and four inches at the top, from which the walls are extended with studding and rustic.

A novel feature in this building is the sink and the shelf for the Babcock tester which have been made of cement, as well as a sunken vat in one corner of the room which will be used for keeping the milk cool in the hot weather.

The hay barn was built adjoining the milking barn, although not under the same roof, as in planning an idea was kept in mind of the possible production of certified milk at some time in the future. This was built large enough to hold a season's crop of hay, but it is the intention to chop all of

the hay so that so much room will not likely be needed.

The milking barn was built with the same thought of sanitation and convenience as the milk house, the floors and mangers being made of concrete with outside wall of the same material built up about four feet.

Steel stanchions were installed and a home-made device answers the purpose of separating the manger into individual mangers or it may be removed to allow a thorough cleaning with very little work.

A manure carrier carries all of the solids out to a large open vat 16 feet wide and 30 feet long with a sloping bottom three feet deep in the deepest place. This vat adjoins the main irrigating ditch and it is planned to distribute the bulk of the manure on the land through first getting all of the liquid matter mixed with the water as the fields are being irrigated. That portion of the manure which will not dissolve in the water will be spread over the ground with a manure spreader. The vat will also be used to drain the liquid matter from the gutters and it is thought that it will be one of the big labor savers of the dairy.

In December, 16 cows were being milked, but it is the intention to enlarge the herd to 26 next spring, the barn furnishing room for that many head. It is the intention to handle pure-bred Jerseys later on, and for that reason a pure-bred bull has been purchased, also a foundation of pure-bred Duroc hogs from the herd of J. K. Fraser.

With the 16 cows milking we were informed that the monthly returns were \$160, or \$10 a head, which shows that it is possible to get quick returns in such an undertaking.

Still further improvements are planned for the coming year when a modern hog house is to be built, as well as two Green feed stave silos.

In order to overcome labor troubles, milking machines will be installed in a short time and by another year this place should be a well established and profitable plant in the remarkably short time of two years.

FORAGE FOR HOGS.

To the Editor: Does Egyptian wheat make good hog food? Is the prussic acid often contained in sorghum dangerous to hogs when pastured on it? I have read a great deal advising sorghum and cow peas for hog pasture without any reference to the danger. Does sweet clover make fair hog pasture? Will it stand more alkali than alfalfa? In manuring land for alfalfa would you advise spreading on the ground before plowing or after the ground is fully leveled and then discing into the top soil?—C. H. P.

[We do not know what you mean by "Egyptian Wheat." Egyptian corn is one of the sorghums. We never heard of sorghum poisoning hogs and should not fear it. The hog does not eat enough at a time to hurt him if he has other forage also as he should have and the cow peas provide that. Some growers think a good deal of sweet clover for hogs. We cannot answer fully your comparative alkali question, but alfalfa has been found growing in stronger alkali than sweet clover has been noted. We should plow in the manure and not run the chance of getting it too near to the seed.—Editor.]

U. M. Slater, president of the Nevada Packing Company, states that their experiments with sugar beet pulp at their plant near Fallon, are

proving very satisfactory and that a great saving is being made over the old methods used in that section where alfalfa alone is used.

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SCHMEISER IMPROVED PORTABLE AUTOMATIC DERRICK

Consignment Sale Opens Opportunities.

In our last issue it was announced that a consignment sale of pure-bred Jerseys was to be held on the ranch of G. O. Hillier, Modesto, on April 2. Arrangements are taking final shape and indicate that this sale will mark a new and valuable feature to the pure-bred dairy business in California, doing as much to promote the interests of both breeder and commercial dairyman as any other one thing well could. It will probably be the largest pure-bred sale ever held in California, it will also probably be the first of many such sales, which will prove a great convenience in the selling of pure-bred dairy cattle to both buyer and seller.

At least four Jersey breeders will consign stock to this sale: G. O. Hillier of Modesto, R. L. Waltz of Hanford, J. N. Lester of Corcoran and W. A. Bradley of Turlock. It is very probable that one or two other leading breeders will have some stock sold also, though the number will be limited to what can be properly handled in one day, or about 100 head. The arrangements are being made by Mr. Hillier, who will be sales manager, and B. A. Rhoades of Rhoades & Rhoades will be auctioneer. The latter is probably the most experienced and successful auctioneer of pure-bred stock and of dairy cattle in the west and is known well in every dairy district of California and it is certain that the sale will be run off to the best advantage.

The point that is to be mostly emphasized is the protection of the buyer, this is particularly so to sustain the reputation of the breeders, to insure that a good attendance will be present, and to make the sale such a success that other sales can follow, establishing this manner of doing business. No animals will be permitted to be put up that are in any way defective and a written guarantee will be given with each animal.

The advantages of this kind of a sale are many. In the first place the prospective buyer can be assured of getting what he wants. In individual buying it is necessary to first do a good deal of correspondence, which takes time and trouble. Then the buyer has to visit one or more herds to see just what the animal or animals in question look like which takes a lot of time and railroad fare, and unless he sees several herds, he can have a very small assortment of cattle to choose from. What is equally important, the ideas of buyer and seller on price in private sale may not meet to the entire satisfaction of each. In this sale there will be disposed of approximately 100 head. Coming from several herds, there will be representatives of all the leading strains of the breed, and animals of all the leading Jersey types. Thus a man by getting a catalogue can examine into the breeding of the animals he thinks would suit him, and then have quite a bunch of animals to pick from and compare on the ground.

After each sale starts there is no bargaining to do, and the only thing to keep a man from getting an animal at a price entirely satisfactory is the fact that somebody might want it a little more. All of the animals put up are to be sold at the highest bid, there being no minimum prices permitted, or false bids. In this way, every price will be satisfactory to the buyer. The

seller is profited by having a large number of buyers present and selling the cattle with little difficulty.

Such large consignment sales have had the effect where held of standardizing prices, to the benefit of the industry. Some breeders have more ambitious ideas than others regarding value, a few other breeders are too indifferent as to price and as a result a buyer can only be sure by previous experience whether the price of an animal is going to be near average or not. The method of having all prices fixed by competitive sale not only determines what is the general average for stock, quality considered, but it also shows what that price should be.

These sales are a new thing in California, though they have been a success in the East. They do a great deal to help along the industry, for dairymen buy pure-bred bulls that would not do so if they had to fuss around to find one that suited them in quality and price. In this sale there will be, judging from animals listed to date, 30 males of various ages, or a few over. Only a portion of these would go to head pure-bred herds and the rest to grade dairymen. Naturally these would sooner travel to get a pick of 30 head than to go to look at one or two, to say nothing of the advantages of meeting a lot of other good dairymen and seeing a lot of good stock. The fact that consignment sales have promoted good breeding and developed a market for surplus pure-bred bulls has been one of the greatest things in their favor.

Far more than the number of bulls named would have been consigned, if it were not for the fact that a majority of cows were wanted. Dairymen with good bulls would not attend such a sale if they did not have the opportunity to add a few choice cows or heifers to their herds. There are about 65 head of cows and heifers listed, which will be sufficient to help quite a few herds along.

The catalogue describing each animal to be sold and giving breeding will be issued several weeks before the sale, and can be had on application by dairymen interested.

This space is given to the subject, not on account of the sale itself, but on account of the possibilities and on account of the fact that if it is a success, others will frequently be held by various breeders, and in various parts of the State, owing to the great advantages over present methods of selling. There is no reason why such a sale should be limited to Jerseys. A bunch of Holstein or Guernsey breeders could do the same, or breeders of other stock. In fact a large sale in which Holsteins would be handled one day, Jerseys another, and other stock the third day would bring together more breeders and arouse more interest than anything that could be done.

The greatest thing about it is the fact that it makes more dairymen appreciate the value of good stock and use pure-bred sires, thus helping along the industry.

A NEW HERD OF HIGH-CLASS GUERNSEYS.

Guernsey men in this State will be interested to know that what promises to be one of the largest and best Guernsey herds in the State has re-

cently been established in San Diego county by the Walter H. Dupee company on their ranch near Santee, the cattle having been imported from the East the past fall.

A recent visitor to their ranch tells us that there are over 50 head in the herd, many of which have high official records, and that the new owners are continuing along that line, having had an official tester at work for the past two months and that they expect to continue in the same way.

To head the herd two prize winners

were purchased at the recent National Dairy Show held at Chicago, and our informant states that for quality they are hard to beat.

Only the most modern of buildings have been erected and it is claimed that there is no better plant in the State.

If present plans are carried out, a part of the herd will be shown at all of the fairs in this State, as well as in Arizona, which will very likely aid in making the Guernsey breed more popular in this State.



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"That goes to show what a little dynamite and a little common sense will do. Only a couple of years ago you couldn't get anything to grow here but swamp grass, puddles and mosquitos. A little

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a big drainage ditch, and—a worthless swamp changed into as fine a bit of grass-land as you'd care to see.

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Sheep Men Adopt New Tactics.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Although the recent tariff revision on wool rankled in the heart of every sheep grower present at the annual meeting of the California Wool Growers Association, held in San Francisco, January 9, it did not interfere with plans being made for advancing the sheep industry of the State.

As President Kimball stated, "There is no use crying over spilt milk," and instead of longer worrying over the tariff it is now the aim of the association to promote the industry along other lines.

In order to do this it seems evident that the fresh meat market is the one best bet at the present time and with that in view all efforts in the future are to be made in developing the demand for mutton and lamb.

That there is much room for development in this respect was shown by a paper prepared by S. W. McClure, secretary of the National Wool Growers and read by Prof. Gordon True, in which it was shown that the price of mutton and lamb in all of the leading markets of the United States was several cents below that of other meats, whereas it should be as high or higher when its food value is considered.

It is thought that this condition exists because the consumer is not acquainted with either the food value or the difference in price and that by a consistent advertising campaign to be carried on by the sheep grower these facts will greatly stimulate the demand for mutton and lamb and as a consequence sheep prices will be sufficiently high to put the industry on a more satisfactory footing.

Like the former tariff problem, this new scheme will mean that the sheep men have a gigantic work on their hands, but there is every reason to believe that they will be able to carry it out successfully in view of the strong and influential organization that they have to work with.

Not only have the sheep men been harmed by the reduction on wool, but also on fresh meats and while the Australian meats have been arriving for some months at the San Francisco port, nobody has seemed to know what the final outcome would be. Dr. Hicks who has charge of the inspection of imported meats for the Government gave some remarks on this subject as well as figures showing what the importations have amounted to so far. He stated that since August 1, there had been a total of 2300 carcasses of beef, of which 800 had arrived during the past two months, 312 calves of which 212 arrived during the past two months, 2092 sheep of which 2000 had arrived during the past two months, and 1200 lambs all of which had arrived during the past two months. From this it would seem that the mutton and lamb shipments were increasing a great deal faster than any other kind of meat and would therefore not be very encouraging to growers in this country, if it were not for the fact that Australia is subject to immense droughts that work a severe hardship on the sheep men of that country. Dr. Hicks read a letter which he had received from Washington in which it was said that the amount of sheep killed in 1910 was 120,000 tons, in 1911 only 111,000 tons and in 1912 it fell down to 93,000 tons.

Farther on in his talk he mentioned that he did not consider Australia

would materially affect prices here, as any increase in price at this point would mean a considerable increase in Australia quotation and that when a similar thing happened not long ago, the labor unions of that country agitated a move to put an export duty on meats, and that such a duty would prohibit any competition with sheep growers in this country for the home markets, although the imported stuff does come in first class shape and very little of it is ever rejected.

As to what may be expected from the Government forest reserves Mr. Hatton of the Forest Service stated that the ranges were now carrying all of the sheep that was possible at this time, but said that as time went on he expected to be able to carry more stock on the present ranges, as since overstocking has stopped the ranges are gradually becoming better. Last year's drought in many sections, taxed the resources of the reserves and while sufficient range was afforded for the cattle and horse men there was not sufficient for all of the sheep petitioned for.

Prof. True of the University of California gave an informal talk on what the University hoped to do in promoting the sheep industry of the state and also stated that in his opinion California should become famous for fine wool sheep and in fact should be the acknowledged center of breeders of such breeds. He said that in his opinion we would always have need for such sheep with our large areas of cheap range lands and climate which is particularly favorable for fine wool sheep. He stated that he considered the opportunity for mutton sheep to be extra good at this time for the smaller farmer inasmuch as they could be raised in small numbers on almost every ranch and cited the State of Ohio as an example of what could be done here, for in that State which is one of the big mutton producing ones of the country, it is produced on the smaller farms.

I. D. Graham, who addressed the meeting, urged the members to do everything possible to exhibit at the Panama-Pacific Exposition in good-sized numbers and was told that every effort will be made to have the National Wool Growers Association hold their annual meeting here at that time.

President Chas. Kimball and Secretary Ellenwood were re-elected for the ensuing year after which the meeting was adjourned.

OFFICIAL RECORDS FOR CALIFORNIA HOLSTEINS.

Out of a total of 265 cows reported on by Malcolm Gardner of the Holstein Friesian Association that had completed official tests from October 23 to November 14 there were 19 California owned cows, whose seven-day records and the name of the owners and animals appear in the following:

Leland Stanford University, owner:—Vina May, 77234, milk 465.9 pounds, fat 15.516 pounds; Paya 2nd, 120592, milk 428.8 pounds, fat 12.181 pounds; Autun, 140063, milk 336.4 pounds; fat 13.137 pounds.

J. W. Benoit, owner:—Damisela, 51680, milk 468 pounds, fat 13.051 pounds; Koroba Electa, 146319, milk 442.7 pounds, fat 11.49 pounds; Venteta Electa Netherland, 195005, milk 387.9 pounds, fat 10.824 pounds; Walhalla Princess 2nd, 145134, milk 352.3 pounds, fat 10.060 pounds.

A. W. Morris and Sons, owners:—Dora De Kol Jeek, 146502, milk 351.1

pounds, fat 12.867 pounds; Molly Korndyke Hengerveld, 140853, milk 356.2 pounds, fat 11.58 pounds.

M. M. Holdridge, owner:—Sleepy Hollow Meditation, 110832, milk 651.3 pounds, fat 3.25 pounds; Storiette Belle of Sleepy Hollow, 136389, milk 608 pounds, fat 18.937 pounds; Jemima Aaggie Wase, 136384, milk 548.9 pounds, fat 14.936 pounds; Imperial Betty, 100634, milk 506.7 pounds, fat 12.708 pounds; Madrigal of Sleepy Hollow, 133783, milk 495 pounds, fat 18.502 pounds; Agatha of Sleepy Hollow 2nd, 133789, milk 505 pounds, fat 17.257 pounds; Julia Clothilde of Sleepy Hollow, 133786, milk 430.5 pounds, fat 16.084 pounds; Anselogess of Sleepy Hollow, 136382, milk 613.1 pounds, fat 15.827 pounds; Cantate Pietertje of Sleepy Hollow, 133336, milk 379.2 pounds, fat 13.172 pounds.

From this list it will be seen that California breeders are fast learning the value of the official test and it is to be hoped that they continue along that line.

The Association of California Agricultural District Fairs is to meet in San Francisco, February 7, to elect directors and take up active work. The legislative committee will frame a district fair bill, and steps will be taken to promote the interests of the district fairs at the 1915 Exposition and otherwise.

A Farmers' Institute will be held at Chowchilla January 28.

Salvador Stock Farm Shire Horses



In three years my horses have won over fifty prizes and every championship, at the California State Fair.

My prize winners are for sale for cash and the prices are reasonable.

MARES AND FILLIES ALSO FOR SALE.

HENRY WHEATLEY,
NAPA, CAL.

800—HOLSTEINS—800 Dispersion Sale

Without reserve, the well known Jersey Farm herd of 800 highly bred Holstein cows is offered for sale.

This herd has been bred to the best registered Holstein bulls for 17 years and the cows are practically purebred, but not registered.

Mostly young stock and all heavy milkers.

Springers are available now, fresh cows later. Prospective buyers will be met at the depot by appointment.

Railroad and post office address

Jersey Farm Dairy
San Bruno, San Mateo County, Cal.

TELEPHONE, South San Francisco, Main 92.

Address Superintendent.

Veterinary Notes.

Answered by Dr. Chas. C. Wing,
San Francisco Veterinary College.

REMOVING CANCEROUS GROWTH.

To the Editor: I have a young mare with a cancerous growth on the inside corner of her eye. It's about the size of half a walnut and has been there for over a year—in that time has grown from the size of a pea to its present size. A few days ago I consulted a veterinary. He thought it of a cancerous nature and gave me the following prescription to apply to it: Powdered blood root 1 oz., chloride of zinc 1 oz. Take equal parts of the powdered blood root and chloride of zinc, and a little flour and water to make a paste. Apply three times a day.

Before using this, I would like to know your opinion. Any information on this subject will be gratefully received.—H. C. R., Jenny Lind.

The enclosed prescription is an old quack remedy for removing "cancerous" growths, and is exceedingly dangerous, as it destroys all tissue that it comes in contact with. Therefore if any should reach the eye itself the animal would lose its sight. From your description of the enlargement I believe it to be a tumor of a benign nature. I advise having a graduate veterinarian examine the eye and in all probability an operation is the proper treatment.

MUSCULAR RHEUMATISM IN COW.

To the Editor: We bought a cow a couple of months ago, due to calve last of January. A short time ago we noticed she dragged her right hind foot, but seemed to get over it; now she is so lame in it and can't bear her weight on it. I examined her foot, could see nothing wrong with it, pressed the muscles on fleshy part of her leg by her hip and she raised it up like it hurt her.

She has all the alfalfa hay and some green feed that she wants to eat and fresh artesian water. We turned her dry two weeks ago. Can you tell us what is the matter and what to do for her? She does not seem to eat very hearty now.—M. P. C., Waukena.

Give the cow half pound dose of Epsom salts once daily until bowels operate freely. She is troubled with muscular rheumatism.

Use following medicine: Bi Carbonate of soda, 4 ounces; salicylic acid, 4 ounces; powd. ginger, 2 ounces.

Mix together and give tablespoonful three times daily in small amount of bran mash.

WARBLES AGAIN.

To the Editor: Have found lumps on our cows' backs, containing small white worms (one for each lump), which when squeezed contained yellow pus. Kindly advise me cause of these and whether they are serious. What would be right to apply and any thing else I should know concerning these worms.—R. A. T., Patterson.

[The trouble is Warbles. The cause and treatment was fully discussed on page 613, issue of December 27, 1913, so need not be advised about again this season. EDITOR.]

REDUCTION OF SWELLING.

To the Editor: I have a young mare which has been running out in pasture several months and in some way

sprained her ankle. Although it has never lamed her it has swollen to about one-third its natural size. So far I have been unable to find anything to be of any help to her. So would you please inform me if there is anything that can be done to reduce the swelling.—J. M., St. Helena.

This is a case of Lymphangitis. Were it due to a sprained ankle and enlarged as you say, the animal would still be lame. It is almost impossible to remove the enlargement at this late day. I would advise the application of a Spanish fly blister once every five weeks. This treatment would enlarge the leg but would eventually result in its reduction.—Dr. E. J. CREELY.

FAILURE OF MILK FLOW.

To the Editor: Have a cow that has gone nearly dry since freshening about two months ago. I dried her off about 4 weeks before coming in, was giving about one and a half gallons per day. She gives from 4 to 5 gallons per day when fresh. Am feeding first cutting alfalfa and barley with some foin, about 3/4 alfalfa. Last winter I fed first cutting alfalfa and foin. It got wet while in the shock and I stacked it a little damp causing it to heat so much so that the bottom and center of stack was black and crisp. Around the outside was about the color of tobacco and smelt much the same. I cut and fed the outside and the cows seemed to like it better than good alfalfa.

Can you tell me the cause and give me a remedy for same? The cow is 10 years old, in good flesh, seems well and hearty.—J. C. F., Alpaugh.

The secretion of milk can be lessened by any systemic disturbance. Feed good, clean, wholesome hay. Observe animals' bowels, if regular or not. If constipated give dose of Epsom Salts, 1 lb.

TREATMENT OF SUMMER SORE.

To the Editor: Can you give me any information in regard to a horse which I have, as there is no veterinarian in this part of the country. This colt has a growth on his foot just above the hoof, and in front it looks like a wart, and is about the size of one's fist. It is at all times raw-looking and bleeding. The bleeding is perhaps due to hurting it in walking around. I cut this growth off once, and seared it with a hot iron, but it is coming back again. Would it hurt to cut this out clear in to the bone?—Subscriber, Alturas.

Don't cut it deep yourself as you are liable to do more injury than good. The animal is affected with a so-called "summer sore" because it is worse in summer than in the cooler months. This is a hard proposition for the best veterinarian to treat. Use the following:

Carbolic acid, 4 ounces; Comp. Tincture Iodine, 8 ounces. Apply once daily.

INFECTIOUS UDDER DISEASE.

To the Editor: We are troubled with sore teats on our cows. A small lump first appears on the teat filled with pus. This afterwards breaks and forms a large scab. It is evidently contagious for as many as a dozen cows will be affected at once on all of their teats. Can you inform me as to the cause? Also, what is a good treatment for the same?—R. D. K., Oakdale.

This is a specific infection and is

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Government Inspectors are using KILMOL in the SQUIRREL DESTRUCTOR in a great many sections of California, which is the best recommendation possible.

One Cent is the average cost for material for killing each squirrel; the average cost for labor and material being from 18 to 28 cents an acre.

The KILMOL method is the quickest method known; all the time necessary to treat each burrow being

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100% Efficient It costs you nothing to learn all about this wonderful method—the best ever discovered for killing squirrels and gophers. Let me prove these statements. Send to-day for particulars.

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5 gallons Kilmol to-day is worth \$100.00 in crops to-morrow

I can also supply you with Strychnine or Barley poisoned according to Government formula. Write for prices.

carried from one cow to the other by the milker's hands. Have the cows affected milked last and don't allow the milker to touch another cow until he thoroughly washes and disinfects his hands by dipping them in a 1 to 1000 solution of Bi-Chloride of Mercury.

Cleanse teats and wash with above solution and then grease them with sweet oil.

CURE FOR SCOURS.

To the Editor: Please let me know through your paper how to cure a cow of the Scours? How can I cure a cow with leaky teats?—A Subscriber, Le-moore.

A cow with diarrhoea is easily cured, by discovering and removing the cause, I would advise a good dose of salts after which plenty of whole flax-seed tea in which 1 drachm of Tannic acid daily is given. I would have the nearest graduate veterinarian operate for leaky teats.—Dr. E. J. CREELY.

REPORT ON RED WATER IN CATTLE.

The Washington Agricultural Experiment Station has just issued a preliminary report on the investigations of Bovine Red Water in Washington as Bulletin No. 112. This disease, or possibly one closely related to it sometimes occurs in parts of California and the bulletin might possibly be of value to some stock men.

PERCHERONS

Pure-bred and registered. If you want good ones, I've got them.

E. S. PORTER, Los Molinos, Cal.
One-half mile south of town.

The summary of the findings follows:

1.—Red water is a specific disease of cattle and is quite common in the western part of Washington.

2.—It is characterized clinically by the constant or periodic discharge of bloody urine and by its chronic course; and pathologically by the characteristic vascular lesions which occur on the bladder mucosa.

3.—The cause of the disease is yet to be discovered.

4.—Blood of sick cows seems to be innocuous to healthy ones.

5.—The disease has been apparently transmitted from a sick to a healthy cow by inoculation of the latter with the bladder lesions of the former.

6.—Although some drugs seem to render temporary relief, treatment as a whole has been very unsatisfactory.

7.—Permanent recoveries from red water are doubtful; a cow once affected with the disease nearly always eventually succumbs to it.

R. V. Hall has sold his 900-acre ranch near Stratford, Kings county, to B. E. Perkins, of Wyoming, who will improve the property at once.

Ducks For Quick Profit.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

Ducks that have been fed right will soon be laying, and anyone who is close to a good market can find no better or quicker way of making money than by raising a few hundred ducks. Eggs can be bought from breeders much cheaper than stock ducks can be wintered unless the person has a piece of pasture land that the ducks can be turned out on. This very few have, so we will conclude that the eggs have to be bought.

WHERE TO BUY.—It is always best to buy from some reliable breeder who advertises, because if a man does not advertise he may, or he may not have the right kind of stock, and if the purchaser does not know much about ducks, even though he sees the stock he may get what he does not want. By this I mean that he may get duck eggs from a breed that are not suitable for the purpose he wants them for. If you are going to raise ducks just for market, as that is the meaning of "ducks for quick profit," you want a table duck. The two best breeds for table ducks are the Aylesbury and Pekin. The Pekin is the favorite duck for our markets as they head the list for quick growth.

INCUBATOR MANAGEMENT.—If you are going to hatch in an incubator, be very sure that it is in good running order and that the egg chamber has been washed out with a strong solution of Creolin and water to kill all germs. When the temperature has gained the 102½ mark put in your duck eggs and keep it at that or lower, but never higher until just before the hatch is due, when it may be allowed to run up to 103. But it is well to remember that duck eggs will not stand the high temperature that hen eggs will, so keep a good watch on the thermometer.

In cool weather the airing must be done with judgment; leaving the eggs out too long may result in a chill while too short an airing will weaken the ducklings; if the room is chilly it is safer to throw a soft cloth over the eggs and thus conserve the heat. In warm weather the eggs should be aired twice a day and left out long enough to get just cool to the touch.

About the second week commence sprinkling the eggs with warm water just before putting back in the egg chamber. Be sparing of the water for the first few days; if the weather is rainy it is not necessary to sprinkle very much, as the eggs will absorb moisture enough. In dry weather, however, sprinkling must be done or the ducklings will not break the shell.

BROODING.—If the eggs are hatched with hens, take them away and make a little fireless brooder for them, but if incubator hatched, have your brooder ready and about the same heat you would keep chicks.

The first two weeks is the critical period in a duckling's life, and if this time can be tided over there is no more danger.

Give nothing to eat the first two days and only a little warm water to drink, and don't forget that for two weeks the water must be slightly warmed or there is danger of cramps. Start them with "Spratt's patent chick meal," if you can get it; if not, with rolled oats and bread moistened in milk. Give just what they will eat up clean, as there must be no sour feed given. At feeding time set a dish with

water besides the feed, and have it deep enough for the ducklings to wash clear up to the eyes. A tomato can set in a six-inch granite dish makes a good duck fountain. Punch two holes in the top of a tomato can, fill with water and turn over or invert, into the granite dish.

At the end of four or five days they can be fed a mash as follows: One part bran, one part middlings, two parts cornmeal and ten per cent beef scraps with a little grit or coarse sand. Moisten all up so that the mash is crumbly, not wet and soggy. I prefer to use sand and put it right in the feed then I know each duckling gets some. Use plates or boards to feed on and always take away what is left over and feed to the chickens.

Now as the ducks get older keep increasing the amount of beef scraps in the mash, or give an equivalent in some other kind of meat, because it is the animal food that makes the ducklings grow so quick. At eight weeks old you should be feeding at least twenty per cent of beef scrap and at ten weeks your ducklings should weigh from six to seven pounds and that is the time to sell. Never keep them over twelve weeks, as they will begin to lose if you do.

MARKETS.—Now before venturing on duck raising it is always best to know where your market is and what distance you are from the best. Not all places have a good market for ducks, but in San Francisco there is good sale for all the ducks that are ever raised within a reasonable distance of it. Where there are any Hebrews, there is sale for ducks and geese, because they are particularly fond of these two articles of diet. By keeping posted on the Hebrew holidays and getting your ducks ready for shipment about that time a much better price can be realized than if they are shipped haphazard. But don't forget that these people are connoisseurs and know what is good.

Los Angeles is a poor market for ducks, so of course there are not many raised except the Indian runner which comes in to help out the egg basket. But the Pekin duck is a good layer too, and a much better and larger duck for table purposes. The only thing against it is that the eggs are real duck egg color, and of late these eggs do not find favor on the market.

CANNING POULTRY.

One of our readers makes inquiry about canning broilers, and while I am not prepared to give the modus operandi of an expert canner in a wholesale way, a few hints about home canning may be useful.

Canning chickens is no different than canning any kind of meat, and very few people do things exactly alike. All farmers' wives used to put up the summers supply of meat and I see no reason why they should not can the extra chickens.

Now my way is to put the chicken, which has been well cleaned and salted slightly, in a covered pan with a little water. The water will help cook the chicken and at the same time prevent it browning, something you do not want in canned chicken. Cook rather slowly until the bones will separate easily from the meat. Broilers would, of course, not need so much cooking as older stock.

At this stage take the pan from the oven and as quickly as possible remove the bones, setting the pan back

in the oven to keep hot. Now get ready your cans or glass jars—one is just as good as the other for home use; take a fork and fill can with meat to within a half inch of top, then fill up with gravy and seal up as quickly as possible.

Exactly the same principles as are used in fruit canning must be used in canning meats of all kinds, that is, there must be strict cleanliness, and everything must be piping hot, so that there will be no germs get in from the air. Steaming hot stuff, whether it be fruit, vegetables or meat, drives germs away from the jar. The jar and lid must have been previously sterilized and the lid or tin cap put on and fastened before cold air can get in can or jar. Everybody can do the work the way that best suits them but they must work on the same principle or the food will not keep.

When canning in a small way, it is best to have all the chickens prepared ahead, then when the cooking begins, the operator can put all her attention on that side of the business. In that way quite a good many chickens could be used up in a day.

In canning hens they would require very slow steaming and for that a steamer would be the best thing to cook them in. Good fat hens make lots of rich gravy and when cooked in a pan in a steamer this gravy could be put in the cans and would make most delicious meat for hot summer days. By simply heating the can of chicken and boiling a few potatoes you can have a dinner fit for the gods.

BREEDING FOR VIGOR—MASH METHODS.

(The following answers to Mrs. E. D. were accidentally mislaid, hence a delay in answering.—Editor.)

The White Minorca is frequently used to cross on the Leghorn and it is very good when the Leghorn stock is run out. It is not good policy to breed daughters to sire unless you do it scientifically. As for breeding turkeys that way it would not pay at all. That is what brings disease among flocks of turkeys. New blood is the only way to have healthy turkeys. You can put the new blood in the flock either through the male or female line. One hen mated to your original tom, will give you fresh blood for the following year on the male side. Sell all the hens that come from this mating and you have enough new blood to keep your flock in health at very little cost.

In regard to the mash mentioned your ration is too narrow. One gallon of such mash as was given in a late copy of Press, should feed fifty hens. Poultry need more variety in a mash than two or three ingredients. The

mash can be fed either moist or dry at the option of the feeder, it makes very little difference which way so that it is not sloppy.

EGGS AND PARCEL POST IN ENGLAND.

Not long ago we had something about shipping eggs for hatching by parcel post. The shipping of eggs for table use, dressed poultry and other farm products is even more important than shipping eggs for hatching, and it is given a new impetus by the late reduction in rates and increase in maximum weight that can be shipped. Just what we can expect from the post from experience in Great Britain is described in a Consular Report.

This states that, the privilege of transmitting farm produce, such as butter, eggs, cheese, meat, fruit, and fresh vegetables, by parcel post in Great Britain is not very generally utilized, most farm produce being sent to neighboring markets by carts or wagons, or sold to dealers and retail stores in the surrounding towns, while in many instances producers are under contract to sell their whole output to factors or wholesale merchants.

Small farm or poultry keepers advertise in the press their produce for sale, and where only small quantities are desired, the parcel-post system is the usual mode of transmission. Meat is scarcely ever sent by post, the joints being usually inclosed in bass bags and sent either by forwarding agents or by rail. Butter sent by post is usually wrapped in grease-proof paper, inclosed in corrugated card packing, and then placed in stout cardboard boxes, or sometimes in wooden receptacles. Eggs in small quantities are packed either in paper, shavings, or sawdust in stout cardboard boxes fitted with sectional divisions for each egg; but for quantities of three dozen or more, special wooden boxes fitted with similar divisions are used, and the packages are dispatched by forwarding agents or rail. Cheese is seldom sent by parcel post, except small cream



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varieties, which are first packed in grease-proof or silver paper, then in corrugated or fluted cardboard, and finally in a cardboard box. Fruit and fresh vegetables are usually sent by rail or forwarding agent, as the weight of parcels that may be sent by post is limited to 11 pounds, and the usual container is a rough wooden or tin box. In the case of eggs in quantities of not less than three dozen, the wooden cases before mentioned are returnable free of charge as empties when sent back through the firm that delivered them.

PACKING.—There are no general or specific styles of packing or wrapping used by the various small farm or poultry keepers, nor are there any special regulations on the subject, except that the postoffice advises that the packages be marked "Eggs" or "Fruit—With care," or the name of the article and the word "Perishable," and that care be exercised in the packing to prevent the contents of other parcels from being damaged by contact with grease, juice, or other possible leakage. Producers provide the kind of package which, in their discretion, is best suited for their particular goods; liquid cream, for instance, is packed in earthenware jars (sometimes white pulp cardboard receptacles with a round card disk for the cover thereof), then in corrugated card packing and paper, while thick or clotted cream is packed in tins.

Parcel-post charges must, by regulation, always be prepaid, and the cost thereof is invariably paid by the pro- quotation. There is no collect on delivery for goods sent by inland parcel post, though forwarding agents generally undertake collect-on-delivery business, collecting the amount due from the purchaser and remitting it to the producer, who pays the carriage charges. Goods sent by rail C. O. D. are transferred to carriers undertaking this service, the producer previously arranging with a particular firm to act in this matter.

CHINESE INCUBATING METHODS.

The Chinese method of incubating eggs has probably been described before, but a Consular Report recently issued describes the process accurately and concisely and it is worth repeating. It is said that usually a large percentage of the eggs produce live chicks.

The breeder first takes a quantity of unhusked rice and roasts it, cooling it down by fanning or by allowing the wind to blow through until it is lukewarm. He then spreads a 3-inch layer of the rice in a wooden tub and places about 100 eggs thereon; another layer of rice, this second and subsequent layers being but 2 inches in thickness, is spread over the eggs. Each tub will have six layers of rice and five layers of eggs, so that there will be 500 eggs in each tub. The rice should be heated once every 24 hours, the eggs being taken out at such times. When the eggs are again put in the rice the bottom layer is placed on top and each of the other layers one row lower down, while the eggs previously in the center of the tub are placed at the edge. The entire tub is covered with a cotton mattress. The chicks and ducklings are produced in 20 to 30 days.

One of the great difficulties with this method is the inability to tell just when the eggs will hatch, which of course renders the smothering of the young very possible. The measure of

success of the breeder depends largely upon his ability to care for the chicks at this time.

POULTRY HINTS.

If you put a White Leghorn cock with Black Orpington hens the progeny will be all white, or white with black splashes and spots. If you put a White Orpington cock with White Leghorn hens, what color will the chicks be? White, say you. No, they won't; they will be every color under the sun.

The chicks that fatten best are those of medium size, broad stocky body, with short legs wide apart.

Ducklings are very susceptible to sunstroke and attacks of heat apoplexy. See that they have plenty of shade on hot days.

If you notice a tendency to diarrhoea among the birds it may usually be checked by adding powdered charcoal to the mash—just enough to color it, not more; if you make the food too black the birds won't eat it.

If your fowls show signs of weakening in vigor, try some new blood, and make a point of procuring it from a breeder whose birds have a free run.

Generally speaking, the suburban yards are limited in area, so that the fowls haven't much room. Fowls are active birds that require abundance of exercise if they are to keep well and strong, and as they don't obtain sufficient exercise in the average suburban back yard they become stale, and go off generally, so that it becomes necessary to periodically introduce fresh blood in the shape of birds that have a free run and that are very fit in consequence of the exercise and hardy, outdoor conditions.

WHOLE OR GROUND GRAINS.

As a result of feeding experiments conducted at the Missouri station it was concluded that whole grain does not fatten chickens; that it is cheaper to feed the grain finely ground; and that the best gains can be had by feeding birds finely ground feeds when confined in crates. In feeding experiments with 3 different fattening rations composed of various amounts of corn meal, the gains made were in proportion to the amount of corn in the ration. The best returns resulted from a ration consisting of 24 parts white bolted cornmeal, 6 parts low grade flour, and 1 part each of oatmeal, pea meal, buckwheat middlings, and wheat middlings. The flesh of the birds fed on this ration was creamy white in color, the fat was distributed over the body, and the entrails were encased with fat.

VALUE OF THE SKUNK.

The unpopular, despised and persecuted skunk is really an animal of great value to the farmer, according to the U. S. Department of Agriculture, and deserves encouragement rather than attack. Its food consists very largely of insects, mainly of those species which are very destructive to garden and forage crops. Field observations and laboratory examination demonstrate that they destroy immense numbers of white grubs, grasshoppers, crickets, cut-worms, hornets, wasps, and other noxious forms. The alarming increase of the white grub in some localities is largely due to the extermination of this valuable animal.

It is a matter of common observation where white grubs are particularly abundant in corn fields to note lit-

tle round holes burrowed in the ground about hills of corn. These are made by skunks in their search during the night for these grubs. During the recent outbreak of grasshoppers in Kansas it has been determined that in many cases a large proportion of the food of skunks consisted of these grasshoppers.

Some of the most destructive insects in agriculture are such as do their work below ground and out of reach of any method that the farmer can apply and it is against many of these that the skunk is an inveterate enemy. Notwithstanding all of this, there is probably not an animal that is as ruthlessly slaughtered as is this one, whereas it is equally entitled to protection with, if not more so than some of our birds which enjoy this privilege.

In some regions, especially in the southwest, the bite of the skunk is supposed to produce hydrophobia. This fear is unfounded since it is proved that the bite of a healthy skunk is no

POULTRY

WHITE LEGHORNS by the thousand. MacFarlane and Carrington foundation stock, splendid birds, heavy layers, good fertility. No females for sale. Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100, \$60.00 per 1000. Chicks \$8.00 per 50, \$15.00 per 100, \$140.00 per 1000. Cockerels \$3.00 each, \$30.00 per dozen. White Rocks, Owen Farm and Fishel foundation stock, special prize winning pens only. No stock for sale. Eggs \$3.00 per 15, \$5.00 per 30, \$15.00 per 100. Chicks \$30.00 per 100. We feed green cut bone, and unlimited green food the year round. Ten acre plant, main breeding houses 20 x 160, brooder house 125 feet long. Those who visit our plant, buy our stock. **NEWTON POULTRY FARM**, Dept. 2, Los Gatos, Cal. N. B.—Write for prices on poultry supplies, fencing, roofing, and mixed feed, freight paid to your station. We can save you money.

HATCHING EGGS AND BABY CHIX—Booking orders for deliveries after Jan. 10. We specialize on the white egg commercial breeds. White Leghorns, Black Minorcas. For table fowl and great winter layers our R. I. Reds and Barred Rocks. Our aim is utility, well bred, healthy stock, the kind you want for business, at prices that mean a substantial saving, based on our large output (4000 chicks weekly) and a labor-saving practical plant. Hatching eggs \$3 to \$5 hundred and chicks 7c to 15c each, depending on breed, month and quantity. Circular free. **Roofden Poultry Ranch and Hatchery**, R. 10, Campbell, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities; \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. **J. R. Heinrich Poultry Yards, Arroyo Grande**, San Luis Obispo County, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. **J. A. BIHN**, Santa Clara Valley Hatchery, San Jose, Cal.

MAMMOTH WHITE HOLLAND TURKEYS will win prizes for you. If you need new blood, order a Tom from us. You can't do better. Big, beautiful, white stock. The Gibson Ranch, Orangevale, Sacramento Co., Cal.

S. C. WHITE LEGHORNS from Clover Leaf Farm, Lodi, won four specials and fourteen firsts at the California State Fair, Willows, Oakland and Fresno. Our stock is carefully selected and bred for heavy egg production. Chicks, Eggs and Breeding Stock for sale.

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more serious than similar wounds caused by other agencies.

In Arizona last year it was found that the skunks had done remarkable destruction to the range caterpillar, which if unchecked, would have been extremely serious, and for this reason alone deserve protection by farmers and stockmen.

MEANING OF MARKET SYMBOL.

To the Editor: Would you kindly advise me of the meaning of the symbol @ as it appears in market quotations. For example, California Club, etl., \$1.52½@1.55.—**R. C. S.**, Berkeley.

[This simply means "to"; that is, the price in the example is \$1.52½ to \$1.55 per hundredweight. In other words, the price varies with slight differences in quality from \$1.52½ to \$1.55, and the same with everything else. The sign also means "at," when a single price is given.—**EDITOR.**]

INCUBATOR CHICKS—White, Buff and Brown Leghorns, Black Minorca and White Rock. All high class stock. Send for booklet of prices. **H. S. Kirk**, P. O. box 597, Sacramento, Cal.

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The Home Circle.

The Little Grey Man.

[BY WALTER OGILVY.]

The chain that had fastened them together as they marched from the quarries fell with a dull, heavy thud upon the sand of their exercise yard.

Men stretched themselves and yawned, and whispered one to another.

Warders some little distance off leaned upon their arms, for the days were hot and very much the same. Monotony creeps into a man's soul and smothers it.

The gang were all dressed alike, from the red handkerchief round their tanned necks to the rough, badly fitting boots upon their feet.

"Starkey!" says a warder grimly, "it's a long way to the top of that wall you're looking at so earnestly, and besides upon the far side is a—"

The heavy main gate at the end of the yard at this moment opens noiselessly, and in steps a little gray old man, active and alert. Warders stiffen to attention. The gang, however, pays no heed, but stops talking and waits for the evening inspection.

Quickly he moves among them, looking at each man sharply, with cold gray eyes—almost as cold looking as his prison walls—which have, during long, long years, searched for the thoughts of hundreds of such men, and but rarely failed him, seem now to snap from face to face as he passes. He speaks no word, but at the far end suddenly wheels short.

"Starkey!" he rapped out, "tobacco again. Your foot's upon it. Bring it here, my man." The gang titters and Starkey shuffles forward to give up his tobacco.

They tell stranger stories of the chief who dwells inside the convict station. Forty years' service he counts, and will inform you that the worst men don't come to gaol. "But," he would continue, "I have met men, only a few though, who were perhaps better dead."

* * *

Five a.m., and a cold, rainy morning. The penals are being unlocked. Warders pass to and fro with jangling keys; all are on the alert. A cell door is thrown open and a huge man, a giant, slips out into the corridor. The 28-pound chains are as nothing to him as they hang to his lower limbs.

Suddenly the electric light falls. With a snarl the giant lifts the heavy iron bucket he is carrying high above his head and springs toward a warder in the dark.

The light, brilliant, blinding, is switched on again, and a little gray man is saying quietly behind his Webley, "Put your bucket down, Jackson." And there is a something, a hardening in the intonation of the voice, which causes Jackson to put his bucket down at once.

The man clanks sullenly into his cell muttering: "Christ! Another second and I'd have dashed his—"

"Exactly," says the little man, "but Jackson you're a fool. I've been watching you this past month and knew this would come."

The cell door closed with a bang and so did the incident, excepting that during the morning the warder whom the convict had rushed at was called into the chief's office, and from that day onward he was not allowed among the penals. The man had no sense of fairness, and, as the chief remarked, none

but the best of men can handle the unfortunates. "I must have good officers," he said; "bullies get killed sometimes, and that means endless trouble for me."

* * *

Thursday afternoon, visiting day, and a woman with three kids at the main gate. The woman and her children have not had sufficient food lately. They are pinched in the face.

"Come to see my man," she says to the chief.

"Leave the boy with me," says the little gray man. "He's old enough to remember, you know, and your husband will be out in a few weeks now."

"Yes," whispers the woman, brokenly, "and he's good to me. It wasn't his fault he got taken. The others—"

"He happened to be unlucky to get caught, eh? Ah, well, you know, he'll soon be out. But don't take the boy up; don't take the boy."

Ten minutes later the woman comes back crying. Oh, what tears, what misery, lie behind the bars of life. Surely only those who have been there understand it in its entirety. It is terrible and its memories must last for life. And then the words of the little gray man flash back at us and hit hard. THE WORST OF MEN ARE NOT HERE.

The main gate swings open; sunlight streams through and makes a great golden shaft far up the archway inside. The chief hurries forward and thrusts a bundle suspiciously like Government bread into a pair of little skinny arms, and they are gone.

"Poor beggar," he mutters to the warder on the gate. "By God, Watson," he says suddenly, "men cause frightful misery."

"Yes, sir," says Watson half-sullenly, for his fancy girl has been carrying on with a soldier during the past week, "and so do women."

* * *

Once there was a fight in the quarries. A desperate, fierce fight among the convicts themselves. They flew at one another with hammers, and then flung stones. They cursed and kicked and played Hell. And as they fought and beat one another the little man stood quietly above them and watched for a while and then deliberately walked in among them. They stopped; they crowded round him; they could have torn him to pieces. But instead they poured out their grievances, and he, the smallest and yet the biggest among them, stood stock still listening to it all. A real bad man in the crowd lifted a hammer and made toward him. The others felled him and cursed him as he fell. They did not love the chief. None of that rot. Many of them loved nothing. But—and here the man scored—he was fair to them all where many were unfair.

That night at lock-up the ringleader of the row got no supper and the bad man that had lifted the hammer picked okum ALONE for a long while.

* * *

A calm night. Not a sound disturbs the great station which, in the darkness, looms up like unto some grim old fortress of a by-gone age.

Suddenly the voice of a sentinel goes up into the night: No. 1 and all's well"; it wails plaintively. "No. 2 and all's well," comes echoing back; and so the cry goes round until each man knows that his brother in arms is safe.

Sometimes no answering cry comes back along the stillness of the night, and then the dull sullen boom of a gun is heard through the dark and a rocket

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SEND ORDERS TO THE

Pacific Rural Press, San Francisco

goes hissing up. But there, a desperate man is he who attempts escape. And a sleepy warder's life to him, Bah.

The crops were heavy, and the field-

hands were few. Silas Warren, who owned one of the largest farms in the country, tried to induce even Ned Blodgett, the laziest man in the village, to help with the harvest. "Wal, Si," said Ned, laying down his whittling.

"how much will ye pay me to work for ye?" "I pay every man what he's worth," answered Silas Warren. Ned scratched his head meditatively. Then he picked up his whittling. "No, Si," he drawled, "I can't work that cheap."

Willing to Adapt Himself.

A very small pile of coal lay on the sidewalk in front of a house on A street southeast. A correspondingly small son of Ham was sauntering along, and seeing it, scented a job. He rang the doorbell.

"Am dat you all's coal?" he asked the lady who appeared at the door.

"Yes."

"Want it toted in?"

"Yes."

"Kain't I git de job?"

"Why, you're pretty small, and then you might charge too much. You might ask more than I could pay."

"How much is yo' got?" asked the small man of business. "Kin yo' raise a dollah?"

"Oh, my goodness, no."

"Seventy-five cents?"

"No; run along, and don't bother me," and she started to close the door.

"Mebbe so you'll gib fifty cents."

"No, no; run along."

"I reckons yo' all ain't got er qua'tah?"

"No."

"Ner a dime?"

"No, not even a dime," replied the woman, beginning to laugh.

"Well, how much is yo' got?" questioned Ham, showing his ivories. "I surtlny does want er get de job."

"I've got just a nickel."

"Well, I'm jus' a-lookin' fer nickel jobs," and he straightway began.

An Irish recruit, with his face badly swollen, visiting the medical officer, said: "I want to know what's the matter with my tooth, sir."

The medical officer looked at the offending molar and informed the recruit that the nerve of the tooth was dead.



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"Well, by hivens!" replied the recruit, "the others must be houldin' a wake over it!"

TO KNOCK GAMBLING OUT OF PRODUCE EXCHANGES.

To the Editor: On December 8th I introduced a bill to regulate stock exchanges, and prevent gambling in farm products, stocks, bonds, and other securities. In other words, to prevent gambling upon the stock exchange. This bill is known as "H. R. 10076."

This bill is but an amendment to the Louisiana Lottery Law, which has stood the test in all the courts, and that the sections down to Section 4, is a repetition of the Louisiana Lottery Law, with the addition of such language as will include stock exchanges. Beginning at Section 4, we add new provisions, providing that every stock exchange shall adopt certain rules governing itself, and further on providing that every stock exchange shall be incorporated under the laws of the State, and that they must keep a record of their transactions, which they do not now do, as a precedent for the privilege of using the mails.

This bill does not destroy the stock exchanges, but destroys only gambling features such as "hedging," "futures," "long and short sales," and indeed all kinds of "washed" or fictitious sales where no delivery is intended to be made, but leaves the stock exchange in operation to sell stocks just as the farmer sells his corn, wheat or cotton. In other words, it leaves the stock exchange as a "common market place for the sale and purchase of bonds, stocks, securities, and farm products," but will not permit it, as disclosed in the Pujo report, to sell 25 times more stock than was listed for sale. In other words, whatever is sold must be owned by the individual or, if he is acting as the agent, by his principal. The law of your State and mine would send us to the penitentiary if we sold a horse we did not own. We are trying to apply to the stock exchange the same principle of compelling them to sell what they own. Of course, this is predicated upon the theory that for "a common market" place a stock exchange is a good thing, and that is true. The trouble heretofore has been that we have failed to reach converts by reason of the fact (so largely due to lack of information) that we ought entirely to destroy the stock exchange. To destroy it entirely would mean to destroy our market. We want to preserve the market feature, to leave it as a common market, but we want to destroy that part that has any phase of gambling and leave it just where the criminal laws leave you and me, compelling us to sell nothing except that which belongs to us.

Eighty per cent of the Members of Congress are anxious to do what their constituents desire of them. The best means of informing them of your desire is to drop them a letter or card immediately telling them to support "Murray's Stock Exchange Bill, H. R. 10076". You may rest assured that every opponent to this bill, whether in Wall Street or your home town, will in less than 30 days be induced to write letters and telegrams to your Congressmen urging upon them the defeat of this bill. If we cannot win now we may never win. The financial jugglers and gamblers, by reason of recent developments in the passage of the banking bill, the Mulhall investigation and the Pujo report, are

so demoralized that their defeat will be easy upon this bill if the people will make it plain to their Congressmen that they desire its passage.

W. H. MURRAY.

M. C. of Oklahoma.

Washington, D. C.

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Home Economics.

Valuable Food Wasted.

Reports from some of the food specialists of the Department of Agriculture indicate that in certain sections there is a serious waste of a valuable food, due to the fact that many housewives do not appreciate the value of suet in cooking and do not know how to use it. As a result many throw good food suet into the garbage pail, or else in rare cases use it with meat trimmings for soap making. Many are unaware that suet possesses the same food value as lard, and if properly tried out is a satisfactory substitute for frying purposes, for shortening, and in making savory fats. Apparently some of the cookbooks have misled the American housewife by stating that suet is good only for soap making. In Europe, however, this food is carefully kept and rendered, and in Germany, suet and lard are used interchangeably for frying and shortening.

Suet is the hard fat about the kidneys and loins in beef and mutton which corresponds to the fat of hogs from which leaf lard is made. Those who do not know how to render it object to the hardness of suet and to its special flavor. Fresh suet, however, can be so rendered as to make a soft, usable fat, practically free from any distinctive flavor or odor.

The following is the simplest method for trying out suet:

"Remove the skin and lean parts from beef fats, and cut it into small pieces. Put it into a saucepan and cover it with cold water. Place it on the stove uncovered, so that the steam may carry off any disagreeable flavor. When the water has nearly all evaporated, set the kettle back and let the fat slowly 'try out.' When the fat has ceased bubbling and the scraps of skin are shriveled, allow the scraps to settle at the bottom of the kettle, strain the fat through a cloth and set it away to cool."

This fat is so valuable in cooking that housewives will do well to save all suet from their meat and try it out.

For those who want a mixture of suet and leaf lard, the following recipe will be found useful:

"Take two parts of suet and one of leaf lard, finely ground and mix together. Render this with whole milk in the proportion of one-half pint milk to two pounds of the mixed suet and lard. (Render means to melt down or to clarify by melting.) The suet and lard mixture may be finely divided by passing it through a meat grinder and may then be heated in a double boiler, when the fat will be quickly released from the tissues, and when allowed to cool will form a cake on the surface of the liquid which may be easily removed."

This fat has a good odor, color and texture, and is softer than the suet alone. It is useful for frying and the shortening of foods with high flavors and may be used with fair results in shortening such things as baking powder biscuits. It is useful for cooking vegetables either alone or with the addition of a little butter.

DO NOT LET FAT BURN IN COOKING.—The unpopularity of fried food in many families is due entirely to the fact that the fat has been burned in cooking. Fat when heated to too high a temperature splits up and may form

substances which have an irritating effect on the throat and may cause digestive disturbances. Fat in itself is a very valuable food and if it is not scorched should prove a healthful rather than an objectionable article of diet. A slightly burned taste and similar objectionable flavors can often be removed from fat by putting into it thick slices of raw potatoes and heating it gradually. When the fat ceases to bubble and the potatoes are brown, the fat should be strained off through a cloth placed in a wire strainer.

FRENCH BEEF-STEAK.—Have ready a tender steak weighing about 1 pound, trim it neatly and cut off all the fat. Wash and prepare one carrot and a small turnip, and cut them into slices, slice half a medium-sized onion, and cut three or four sticks from a head of celery into small pieces crosswise. Put 2 ounces of butter into a stewpan, and when hot add the vegetables and fry them brown; then put in the steak and brown it well both sides. Pour in half a pint of hot water, add a bunch of herbs, and let all simmer together for an hour and a half, stirring occasionally to prevent the contents of the pan sticking to the bottom and getting burnt. Meanwhile have more carrot, turnip, onion and celery boiled in salted water until tender, and bake the trimmings of fat cut from the steak in the oven until brown. When done put the steak on a hot dish, strain the gravy round, arrange the fat on the top, and little heaps of the boiled vegetables round the edge of the dish, and serve very hot.—The Guardian.

COFFEE FOR CALIFORNIA.

To the Editor: I have been reading a great many books on South America, and although most of them tell more about the hotel accommodations and railroad and steamship facilities than about the land, I have been able to gather a few facts of interest. I understand from reading these books that coffee is grown in Brazil only in the higher altitudes where it often gets as cold as in our own Southern California. In fact I read that the trees were frozen one year by a temperature of 14°.

Now in view of this, do you think it would be practical to grow coffee in California? Would it be possible by breeding to produce a tree that would stand our climate should it prove too rigorous for the kinds now grown in Brazil? This is a fancy of mine and I should like to hear from someone who would know more about it than I have been able to gather from reading the books I have.—EDWARD F. STRUVE, Pomona.

[Coffee may be regarded as a possibility in California along the line which you suggest, but there is considerable modification of the plants' requirements to be attained and it is wholly problematical how fully they could be attained. As for temperatures we are not so bad, for the common species, *Coffea Arabica*, has been grown for several years together as an ornamental shrub in the more thermal coast-spots in Southern California. Whether it came through the drop of last January we do not know. But aside from hardiness against frost there is another quality to be obtained and that is tolerance of dry air. This is one of our chief stumbling blocks in following many tropical growths. Although the coffee plant will grow without it, its profitable growth seems to be conditioned on tropical rainfall and from 100 to 150



Madam—

When the problem of "what shall we have for dinner" again presents itself—just remember what a zest

Ghirardelli's Ground Chocolate

adds to any meal. It is ready at a moment's notice, it is liked by every member of the family, it is easily digested—it is, on the whole, a perfect home beverage. Yet it is as inexpensive as anything of its kind you can buy. Thirty cups to every pound.

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inches of rain are received in places where the chief commercial product is made. This produces what is often called the "steaming heat" of the tropical atmosphere. It is in violent contrast to our dry heat and it is the latter which gives our arid semi-tropical conditions a much wider range of adaptations to commercial plants than the tropics themselves possess. Besides Brazil, which grows most of the coffee, has to be careful that she does not over-supply the world and has undoubted capacity to do it. Therefore although our plant breeders might give us a coffee that would grow and bear, it is very doubtful if the achievement would be worth the effort.—EDITOR.]

EUCALYPTUS SEEDLINGS.

To the Editor: Will you please advise me, through the columns of the Press, as to the proper time to plant eucalyptus seed, and what is the best kind to stand the cold weather. I want to plant on the hills and not transplant.—A SUBSCRIBER, Lakeport.

[Eucalyptus seed should be sown in boxes or trays under lath or glass—preferably during the spring, when the general temperature favors germination and the air is not too dry. Eucalyptus seedlings will volunteer around and considerably to leeward of old trees, but there is no wisdom in buying eucalyptus seed for broad-

casting in rough places. The seed is too fine, delicate and expensive for such handling. The way to test eucalyptus in such places as you indicate is to buy a few trees at a nursery and set them out in clearings made for them in places where trees like to grow naturally. If they succeed, they will seed themselves to some extent and will furnish you all the seed you need to grow plants for systematic reforestation of your hills if you wish to undertake it. The hardiest species include the *rostrata*, *viminialis*, *rudis*, *tereticornis*, etc., but they are not nearly so hardy as the native vegetation of your hills, and need to be tested out. If you look about your country you may find eucalypts which have been planted by old timers around their farmsteads. If not, you must study the local temperature records, for eucalyptus trees must be considered more or less tender. We have seen trees 50 feet high killed by a temperature of 10° above zero.—EDITOR.]

Lord Norbury, like other judges, often met with a response which he did not expect. One day, when riding with a barrister named Parsons they passed an untenanted gibbet, and the Chief Justice, turning to his companion, asked: "If that gallows had its due, Parsons, where would you be?" "Riding by myself, my lord," was the prompt reply.

Our Young Folks

The Star.

Karl and Dora and Peter and Dot were making their first visit to Grandmother Neilson, whom they had never seen. Grandmother looked dear and sweet, but she was a stranger, and they felt a little afraid of her. Besides, mother had told them they must not worry grandmother, and they were not at all sure what would worry her and what would not; so all day long they tiptoed about and spoke in low voices, and they were homesick and unhappy.

After supper grandmother went to see a neighbor. The moment that the door closed behind her the children brightened.

"Let's go out and play!" cried Karl. "This is a splendid house for bear—one back porch, one front porch, and two side porches. I'll be the bear," he added, and growled savagely.

With a great show of fear the others ran to the back porch. The game was to try to run from one porch to another without being caught by the bear, who might be lurking behind the nearest bush. It was very exciting, for you could never tell just where the bear was until he jumped out with a terrifying noise. The fun grew wilder; and presently Dora and Peter, who were running round the house in opposite directions, came together with a crash just as Karl sprang upon them from the little honeysuckle arbor, and all three fell on a tall plant and broke it down quite flat.

"I believe it's the plant that grand-ma's brother from Arizona—the one that she's so fond of!" gasped Dora, as she picked herself up.

"It'll be dark when she gets back," said Peter, "and perhaps she'll think that a cow came in and broke it."

The fun was all gone from their hearts and the laughter from their faces. They huddled together on the back porch, unhappy and homesick again.

"Look! Look!" Dora cried, suddenly. "The star! The star! Mother said that she could see it, too."

The setting sun had left a crimson color in the sky, and just at the edge of the glow, where the crimson shaded off into the darkening blue above, there glimmered a faint white spark that they knew was the evening star. It brightened as they gazed, and presently they could see the tiny, glittering points of light round its edge. It was indeed the same star they had watched at home so often—the same star here and the same in Colorado, where mother was. How strange, and yet how dear, the thought was! It made them feel less lonesome and afraid.

Presently a long ray of light shot across the grass from the sitting-room window. Karl looked round at it, and then fixed his eyes on the star again.

"She's home," he said presently. "I guess we'd better go and tell her how it happened."

"Won't she be provoked?" asked Peter, doubtfully.

"I don't know," said Karl. "Mother never blamed us when we didn't mean to. Grandmother may, but I think we ought to tell her. I believe mother would want us to."

So with beating hearts and shaky knees they rose and crept through the dark hall.

"We've done a dreadful thing," Karl said bravely. "You know that plant

that you said your brother brought from Arizona? We were playing bear, and we all ran into it and broke it."

Grandmother took Dora's hand and looked at it gravely. "Where are the scratches?" she asked. "The cactus was covered with thorns, you know."

"Why, so it was!" said Dora with a look of relief. "I'd forgotten what it was like."

"I wonder what it was we smashed?" said Karl.

"I hope it was the bunch of cannas I've been asking grandpa to dig up. There are too many plants there," grandmother replied.

She spoke so kindly and smiled so sweetly that Dot scrambled up into her lap and Dora crept up and leaned against her chair.

"We'll dig it up, grandmother!" said Karl, joyfully. "We'll dig it up tomorrow. Peter and I can dig like anything!"—Mary M. Parks, in Youth's Companion.

Rules for Dolls.

"A wooden-headed doll should be careful not to hit her head against her mother, lest she should hurt her."

"A doll should keep away from the rocking-chairs, as the rockers may crush her."

"A wax doll should avoid the fire if she wishes to preserve a good complexion."

"Often an old doll with a cracked head and a sweet smile is more beloved than a new doll with a sour face."

"It is a bad plan for dolls to be stretched out on the floor, as people are apt to tread upon them; and a doll that is trodden on is sure to go into a decline."

Marjory was reading these rules to her dolly with a very sober face. Then she laughed. "Dolly," said she, "it's funny; but I really believe that these rules are more for me than they are for you."—Our Little Ones.

Warning For Father.

There is a boy nine years old in a family which recently returned to their apartment after spending the summer in the country, says "Forest and Stream." Mother and small son went to the flat. Father went to the office, where a pressure of work compelled him to labor all day and far into the evening. When he got home everybody had gone to bed.

Approaching the bathroom door, he found it closed and adorned with a large sheet of wrapping paper, on which a proclamation of some sort seemed to have been laboriously printed in large and straggling capital letters. Turning up the hall light, this is what father read:

"Do not open the bathroom door.

Do not raise the window.

Do not turn up the light.

Do not make any noise.

There is a mud turtle asleep in the wash basin."

"Just look, Aunt Mary," shouted blue-eyed Mabel, as she pointed out of the state-room window on the first morning out, "just look at the water! It is all covered with flounders!"—Christian Work.

A young man was compelled by his father to turn farmer against his will. Not liking the profession, he went and hanged himself, leaving this written statement: "Farming is a most senseless pursuit; a mere labouring in a circle. You sow that you may reap,

then you reap that you may sow! Nothing ever comes of it."

THE EFFICIENCY PROPOSITION IN AGRICULTURE.

To the Editor: I note the fact that the American Commission on Agriculture Co-operation and Rural Credit is casting about for something that will furnish an excuse for further existence. Allow me to suggest that you gather up your fellow commissioners and with their aid make an investigation of the methods now employed in transferring the products of labor from the producer to the consumer, with a view to discovering methods that will lessen the amount of work required for the distribution of that product.

The people of the United States produce wealth, annually, to the value of thirty-five billions of dollars. The bank exchanges in 1912 amounted to 159 billions. Thus, without counting the cash business of the country, we find a business of more than four dollars, done in bank checks alone, on one dollars' worth of product. Thus more than three dollars on an average is paid for distribution for each dollar paid for actual production. Or, to put in terms of labor, it requires the work of three men to distribute that which the labor of one man has produced.

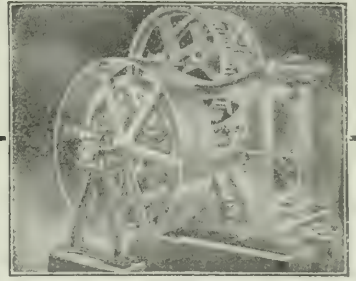
Farmers and manufacturers are continually seeking ways to lessen the labor factor in production. Already the efficiency expert has made his appearance. He goes into the factory, and studies every operation, even using the moving picture machine to study movements too rapid for the eye. Men are taught to do their work with fewer movements than before used. Foremen are shown how to distribute work to best advantage, and superintendents are impressed with the importance of arranging rooms and departments in a way calculated to facilitate the movement of workmen and materials. Their work is astonishing.

I believe far more astonishing results can be obtained by systematizing the distribution of wealth. If, by improved methods, the number of distributors could be reduced from three to two, there would be an annual saving of more than thirty-five billions of dollars.

Cheaper rural credit is but a minor part of producing and distributing with the least expense. When millions are saved in the former billions are to be saved in the latter.

W. O. RETHERFORD, Oakley.

[This is surely very alert and suggestive. Who will follow it up? Readers ought to send us a dozen such pointed letters every week. Whether you believe it or not, go to it either way.—EDITOR.]



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Farm Development, Hays.....	\$2.00
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Breeding Farm Animals, Marshall.....	1.60
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Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoesmith.....	.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees and California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
New Onion Culture, Greiner.....	.50
American Cattle Doctor, Dadd.....	1.00
Home Pork Making, Fulton.....	.50
Farm Gas Engines, Brate.....	1.10
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35

THE MARKETS

San Francisco, Jan. 14, 1914.

Cereals.

WHEAT.

The northern wheat market is pretty steadily maintained, with growers holding back supplies. The coastwise freight rate has also been advanced, but the local market has shown no quotable change. Buyers everywhere are holding off, refusing to meet the prices asked.

California Club, cti....	\$1.52½ @1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½ @1.55
Northern Bluestem ...	1.70 @1.75
Northern Red	1.55 @1.70

BARLEY.

A little more interest has been taken in the May option, at lower prices than have been prevalent. Further weakness has also developed in the spot market, choice feed being a little lower, as offerings are coming out more liberally. Prospects are for a very large crop this year, with a larger gain acreage in the San Joaquin valley than for some years.

Brewing and Shipping..	\$1.37½ @1.42½
Cnoice Feed, per cti....	1.27½ @1.30
Common Feed	1.25 @1.27½

OATS.

Seed grades are neglected, red being a little lower, and the demand for feed is confined to narrow limits.

Red Feed	\$1.65 @1.85
Seed	2.10 @2.20
Gray	Nominal
White	1.45 @1.50
Black Seed	2.50 @3.00

CORN.

The continued weakness in Eastern markets has caused some slight decline here in Eastern yellow. No California corn in marketable condition is appearing. Some Milo maize is offered at the same price as Egyptian.

California Yellow	Nominal
Eastern Yellow	\$1.82½ @1.85
Eastern White	Nominal
Egyptian	1.70 @1.75
Milo Maize	1.70 @1.75

RYE.

There is practically no movement in this grain, which is quoted nominally as before.

Rye, per cti.....	\$1.45 @1.50
Seed	1.65 @1.70

BEANS.

No change in prices has taken place since the first of the year, and local dealers report general conditions unchanged. Practically everything in this part of the State has been taken out of growers' hands, and the entire supply is believed to be comparatively small. The Eastern shipping demand has not yet been renewed, but it is believed that there will be quite a stir in the market within the next few weeks, and as soon as there is any marked demand a further advance in prices is likely to occur.

(On wharf.)

Bayos, per cti.....	\$4.90 @5.00
Blackeyes	4.25 @4.35
Cranberry Beans	4.00 @4.25
Horse Beans	1.90 @2.15
Small Whites	4.75 @5.00
Large Whites	3.30 @3.40
Limas	5.00 @5.10
Pea	Nominal
Pink	3.00 @3.25
Red Kidneys	4.50 @5.00
Mexican Red	3.75 @4.00

SEEDS.

There is some movement all the time, but so far conditions have been unfavorable for any heavy movement. No change has been made in the quotations for some time.

Alfalfa	12½ @15 c
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3¾ c
Canary	7 @ 7½ c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾ c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Business is of the usual routine nature, with prices steadily held at the same level as for a long time past.

Cal. Family Extras ...	\$5.60 @6.00
Bakers' Extras	4.65 @5.20

Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Nothing of much interest has developed in the hay market this week, arrivals in the local market being still very small, but ample for the current demand, which is much below normal. This condition is natural in view of prevailing weather conditions, which prevent any great amount of teaming, either here or in the country; but dealers express little hope of an early revival. The local trade is looking for a record crop, owing to the favorable weather conditions everywhere, and the assurance of abundant supplies is bringing out larger offerings in the country, with a more concessionary spirit in regard to prices, although some are still holding at the old basis. Buyers seem inclined to wait, looking for a general decline.

No. 1 Wheat, or Wheat	
and Oats	\$14.50 @15.50
do No. 2	12.00 @14.00
Lower grades	9.00 @11.50
Tame Oats	12.00 @16.00
Wild Oats	10.00 @13.00
Alfalfa	9.00 @13.50
Stock Hay	7.00 @ 9.00
Straw, per bale.....	65 @ 90c

FEEDSTUFFS.

Business is quiet in all lines, and there is little firmness to prices. Rolled oats have dropped \$1 per ton, and coconut meal is easier.

Alfalfa Meal, per ton....	\$18.00 @19.00
Bran, per ton	24.00 @25.00
Oilcake Meal	34.00 @35.00
Cocoanut Cake or Meal...	28.00 @29.00
Cracked Corn	42.00 @43.00
Middlings	33.00 @34.00
Rollod Barley	28.00 @29.00
Rollod Oats	31.00 @32.00
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

Business in general garden truck is still rather light, though the demand is somewhat better than last week, and with very moderate supplies prices show rather more firmness. Practically everything coming in shows some injury from the continued heavy rain, first-class stock being scarce; and there is accordingly a rather wide range of prices in many lines. Lettuce, celery, and rhubarb, as well as cabbage, remain steady at the old quotations, while cauliflower is a little higher. Sprouts also bring better values, while little attractive stock is offered. Southern beans and peas show an unusually wide range, as trashy stock is in fair supply, while few really first-class lots have appeared. The better offerings of southern tomatoes, green peppers and eggplant are also higher.

Cabbage, per cti.....	\$1.25 @ 1.50
Cauliflower, dozen	65 @ 75c
Cucumbers, Southern, box.	75c @ 1.00
Green Peppers, lb.....	3 @ 5c
Carrots, per sack.....	50 @ 60c
Green Peas, Southern, lb.	3 @ 10c
String Beans, lb.....	3 @ 12½
Summer Squash, lug box.	75c @ 1.25
Tomatoes, Southern, crate	35c @ 1.25
Eggplant, lb.	3 @ 7c
Sprouts, lb.	5 @ 10c
Celery, large, crate.....	1.50 @ 2.00
Rhubarb, box	1.00 @ 1.75
Lettuce, crate	1.25 @ 1.75
Mushrooms, lb.	3 @ 5c
Asparagus, lb.	Nominal

POTATOES, ONIONS, ETC.

An advancing market is noted on both potatoes and onions. A marked shortage in the latter appeared a few days ago, causing a sudden advance. Weather conditions have stopped shipments from nearby points, and with Oregon stock in limited supply the new price is readily obtained. The advance in potatoes is less abrupt, but much higher prices are predicted, as nothing is now coming from the river, and supplies on hand are light and closely held. The Oregon market is also firm.

Potatoes:	
River Whites	\$1.00 @ 1.25
Sweet Potatoes, per cti....	1.25 @ 1.60
Oregon Burbanks	1.20 @ 1.50
Onions: Yellow River, cti.	3.00 @ 3.25
Oregon	3.25 @ 3.50
Garlic, per lb.....	7 @ 10c

Dairy Produce.

POULTRY.

The demand for poultry in general is rather light this week, but young local stock is moving fairly well, and chicken prices are firmly held at the recent advance. Ducks and geese are higher with light offerings, though the demand in this line is not a very important feature. Arrivals of turkeys are about sufficient for the demand, and desirable stock cleans up fairly well at the old prices.

Large Broilers	23 @24 c
Small Broilers, per lb....	27 @28 c
Fryers, per lb.....	20 @22 c
Hens, extra, per lb.....	18 @20 c
Hens, large, per lb.....	18 @20 c
Small Hens, per lb.....	18 @19 c
Old Roosters, per lb.....	14 @15 c
Young Roosters, per lb..	19 @20 c
Squabs, per doz.....	\$ 2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	5.50 @ 8.00
Turkeys, live, per lb....	20 @21 c
do dressed, choice....	26 @28 c

BUTTER.

The market is well supplied, and prices have been gradually declining for the last week, extras being 3½c lower and firsts 2c.

Thur. Fri. Sat. Mon. Tu. Wed.	
Extras ...30½ 28½ 28½ 28½ 28 28	
Firsts ...29 28 28 28 27½ 27	

EGGS.

Eggs have closed the week a little below the last quotation, but on the whole prices have been fairly well maintained, with little change from day to day. Production is reported light everywhere, and with the local demand holding up well there is little expectation of lower prices until there is a marked change in weather conditions.

Thur. Fri. Sat. Mon. Tu. Wed.	
Extras ...45 45 45 45 46½ 44	
Selected	
Pullets...44 44 43 43 43 43	

CHEESE.

Both flats and Y. A.'s are again quoted lower, with a light demand which is amply covered by current arrivals. Monterey cheese is very quiet, as the weather interferes greatly with shipments and the demand since the holidays has been slow, causing a slight drop in prices.

Fancy California Flats, per lb...	17 c
New Young Americas, fancy....	15½ c
Monterey Cheese	20 c

Deciduous Fruits.

There is nothing to quote in this line now except apples, and these are meeting with somewhat better demand than for some time past. Fancy Newtown Pippins are decidedly strong, and there is no difficulty in getting \$2 for California stock, while fancy northern offerings are held at \$2.25, and northern Spitzenbergs bring about the same. The top figure on other California apples has been reduced a little, but everything is moving well.

Apples: Spitzenbergs	\$ 1.25 @ 1.70
Greenings	1.00 @ 1.20
Bellefleur	1.15 @ 1.50
Newtown Pippins	1.40 @ 2.00

Dried Fruits.

Continued dullness is about all that can be reported in the dried fruit market. The only lines for which there is any special demand are pretty well out of growers' hands, and while packers are asking high prices, the quotations to growers are little more than nominal. Packers are taking a little more interest in prunes, but there is very little desirable stock to be had; while interest in peaches is still limited, and a weakening as to prices has made buyers very cautious. At the moment, packers would hardly pay more than 4c and show no great desire to buy at that. In view of the effort of peach growers to get together, it is difficult to tell what the future will be, though conditions affecting the consuming demand seem rather favorable. The New York Journal of Commerce says:

No business in forward shipments of any variety of California dried fruits is being done at present, and export trade also is at a standstill. Advances from Hamburg, which is perhaps the biggest foreign market for

Coast products in this line, are to the effect that while stocks there are very light, if not smaller than in any previous year at this season, and while operators realize that they must eventually buy to cover actual consuming requirements, there is an absolute lack of speculative interest. On the Coast the feeling among sellers is generally firm on everything but peaches. In the latter fruit there seems to be a pressure to sell in order to clean up a considerable carry-over for 1912 and concessionary prices are being made. Apricots are dull but firm under light offerings.

"The Eastern trade still shows a disposition to withhold orders for California raisins, and f.o.b. prices are nominal.

"Both California and Northwestern prunes are firm here and on the Coast, the larger sizes, which are scarcest, being particularly strong. However, the demand at present is comparatively light, no f.o.b. business being reported, and sales of spot goods being regulated by the current moderate demands of consumption.

Evap. Apples, 1913	6½ @ 8 c
Apricots, 1913	10 @ 13 c
Figs: White	3 @ 4½ c
Black	2½ @ 3½ c
Calimyrna	4½ c
Prunes, 4-size basis	5 @ 6 c
Peaches	3½ @ 4 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½ c
Seedless Sultanias	4¼ c

Citrus Fruits.

The Eastern markets are apparently in good shape to absorb the large supplies of oranges that will be sent East from California this spring. Shipments from the southern part of the State are now running over 150 cars per day, and most of the crop from Tulare and Butte counties has already been shipped.

Prices f.o.b. California for oranges range from \$1.50 to \$1.60. At the fruit auction held at Los Angeles last Monday, when 5 cars were sold, the prices averaged from \$1.62½ down to \$1 per box.

On the New York auction, Monday, Jan. 12th, 15 cars of oranges averaged from \$2.65 down to \$1.55 per box. The other auction points were not quite as high as New York.

At Philadelphia, on Monday, 34 cars of Florida oranges ranged in price from \$1.60 to \$3.65 per box.

Lemons are bringing fair prices, averaging from \$3 to \$3.50 per box.

Shipments of oranges from southern California for the season to Jan. 11th were 2,051 cars; from Tulare county, 3,968 cars; from Butte county 367. Lemon shipments so far have been very light, as so far only about 315 cars have gone East.

The San Francisco orange market seems to be in rather easy condition, as local dealers have been able to buy at liberal concessions from the prices recently asked at shipping points, and a sharp reduction has been made in the local market, and arrivals for the last few days have been large. The decline, however, has brought out a much better consuming demand in the local market. Fancy lemons are also a little lower, grapefruit and limes standing as before.

Oranges: Navels	75c @ \$2.00
Tangerines, crate	75c @ 1.50
Mandarin	1.25 @ 1.50
Grapefruit, seedless	2.00 @ 3.00
Lemons	1.75 @ 3.50
Limes	3.50 @ 4.50

Nuts, Honey, Hops, Etc.

NUTS.

The local market is dull but firm, with little desirable stock left in dealers' hands. Practically everything in the country has been sold, and the quoted prices are nominal.

ers' hands, and prices are nominally as before.

Almonds:	
Nonpareils	19 c
I X L	18½ c
Ne Plus Ultra	17½ c
Drakes	15¾ c
Languedoc	15¾ c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c

No. 1 Hardshell	15½c
Budded	19c
No. 2	11½c

HONEY.

Prices have so far been maintained on the old basis, but the local demand is very dull, and holders are getting anxious to clean up, though there is little offering from outside.

Comb, white	15 @ 16c
Amber	11 @ 12c
Dark	9 @ 10c
Extracted: White	8 @ 9c
Amber	6½ @ 7c
Off Grades	5 @ 6c

BEESWAX.

Values are little more than nominal, as offerings from outside points are very light, and there is little demand here.

Light	30 @ 31c
Dark	25 @ 29c

HOPS.

A rather stronger market is reported both in California and Oregon, although so far no great amount of business has been done. Offers of 22c are reported both in Sonoma county and in the North, but growers who have anything left are holding firmly.

1913 crop	20 @ 22c
1914 crop	15 @ 17c

Live Stock.

A general upward tendency is still in evidence, especially in calves and lambs, which are becoming very scarce and bring considerably higher prices. Light and medium hogs are also a little firmer than they have been lately.

Steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Helpers: No. 1	6¼ @ 6½c
No. 2	5¾ @ 6c
Bulls and Stags	2½ @ 5c
Calves: Light	7¾ @ 8c
Medium	7¼ @ 7½c
Heavy	6 @ 7c
Hogs: Grain-fed, heavy	7¾c
150 to 250 lbs.	8¼ @ 8½c
100 to 150 lbs.	8 @ 8¼c
Prime Wethers	4½ @ 5c
Ewes	3¾ @ 4¼c
Lambs	6½ @ 6¾c

DRESSED MEATS.

Steers	12 @ 12½c
Helpers	11½ @ 12c
Veal, large	11 @ 12c
Small	13 @ 14c
Mutton: Wethers	10 @ 11c
Ewes	8½ @ 9½c
Suckling Lambs	13 @ 14c
Dressed Hogs	13½ @ 14c

HIDES.

Prices are quoted at a general advance of ½c. The current demand remains very light, but even such inquiries as appear are hard to meet, supplies being pretty closely cleaned up.

Heavy Steers, over 56 lbs	15c
Medium	14½c
Light Steers, under 48 lbs	14½c
Heavy Cows, over 50 lbs.	14½c
Light Cows, 30 to 50 lbs.	15½c
Kip	14½ @ 15½c
Veal	17½ @ 18½c
Calf	17½ @ 18½c
Dry—	
Dry Hides	25½ @ 26½c
Dry Kip, 10 to 15	24½ @ 25½c
Dry Veal, 5 to 10	29½c

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Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	\$2.75
Medium	2.25
Small	1.00
Colts	.25 @ 50c
Dry	.75 @ 2.00

WOOL.

Local buyers report very little movement at present, a gradual movement having pretty well cleaned up the fall clip, while the spring shearing is still a couple of months off. More activity is expected in the spring, however, as there are indications of quite a large buying movement in the East of late. The outlook, however, is very uncertain.

Northern mountain	7 @ 9c
Southern mountain	7 @ 8c
Defective	4 @ 6c
Lambs	7 @ 10c

HORSES.

Miscellaneous and nondescript stock seems to be fairly plentiful, and a few horses of the more desirable types are coming in all the time, though no large lots have been received lately. In fact, conditions in this market are not such as to invite large shipments, as buyers are inclined to hold off, and full quotations are obtained with difficulty.

Heavy drafters, 1700 lbs. and over	\$275 @ 325
Light Drafters, 1500 to 1650	225 @ 250
Chunks, 1350 to 1500	150 @ 200
Wagon Horses, 1250 to 1350	100 @ 150
Delivery Horses, 1050 to 1250	100 @ 125
Desirable Farm Mares	75 @ 100

MULES.

1200 lbs.	\$200 @ 250
1100 lbs.	150 @ 200
1000 lbs.	125 @ 175
900 lbs.	75 @ 125

PUBLISHER'S DEPARTMENT.

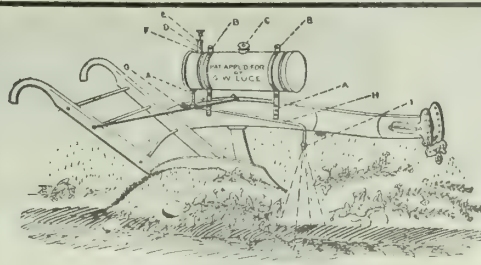
CALIFORNIA SOILS.

A New book by Gilbert Ellis Bailey, professor of geology of the U. S. C., Los Angeles, is among the newest of the California agricultural publications. In this little book of 170 pages, Professor Bailey has crowded everything possible about the soils of this State. While the book may have been gotten up with the idea of use in the classroom, yet it will be of value to everyone interested in working the soil. Price, in cloth, \$1.50 postpaid. Address the University Book Store, Los Angeles.

If you have not sent in your order yet for a copy of our new book, "One Thousand Questions in California Agriculture Answered," we would urge you to do so at once. This book will be found to be a mine of information. To the general agriculturalist, as well as to specialty farmers, the contents will especially appeal. The price of \$1.50 per copy will appear absurdly small to you after you have had a copy in your home a short time. The book contains 256 pages, is well printed and handsomely bound in cloth. Send to us for a copy.

The Western Meat Co. of San Francisco has issued a booklet on soils. Some of its chapters deal with such subjects as: "How to Keep the Soil Supplied with Plant Food; The Utilization of Manure for Fertilizing; A Comparison of European and American Methods of Fertilizing; The Value of Soil Analysis; The Value of Humus in the Soil; The Faults of Mineral Fertilizing; Importance of the Right Formulas; Phosphoric Acid and Its Effect; Potash and Its Effect." These are but a few of the thoughtful, carefully prepared chapters on points of very great interest to farmers. Our readers will do well to send for this booklet which the Western Meat Co. furnishes free, and we commend its careful reading, believing that every farmer who studies this little booklet will gain some knowledge which he can apply in a practicable manner and thus obtain better crops, more profit for his labor and better pay for the time expended in his work.

More new subscriptions were received at this office last week than for any week in a long time. More books are being sold by us direct to farmers at this time than ever before. All of which makes us feel happy and proves that the farmers are not feel-



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ing the financial depression like those who live in cities.

"Roeding's Practical Horticulture" is a new four-page, handsomely printed paper, issued by the Fancher Creek Nurseries, Fresno, for free distribution. In this paper Mr. Roeding tells of the various varieties of trees and shrubs that his firm grows, and when to plant them. Write to the Company for a copy.

LIME ON HEAVY SOIL AND ALKALI.

To the Editor: I am ranching near Athlone. Our soil is generally a rather heavy loam with a chocolate cast. We have a great number of small spots some of which show black alkali while others, especially high places, are very hard and do not take in water. When those spots finally do get wet they are sticky and have a greasy look. What form of lime would you advise on this soil? Would you advise spreading the lime uniformly over the good and the bad spots? Can you suggest a practical treatise on the analysis of soils from which a person could learn to analyze soils without a costly laboratory equipment?—Rancher, Merced.

[On the spots containing black alkali apply gypsum. On the high sticky spots, apply any kind of lime that is convenient, except perhaps quick lime. Probably hydrated or so-called agricultural lime would be best. Air-slacked builders' lime, or ground limestone would be entirely satisfactory. The action you want on the alkali is entirely different from what you want on the high spots. On the first the idea is to change black alkali to white alkali or sulphate of soda, likewise loosening up the soil so the water will sink in and drain off easier. On the high spots the reason for applying lime is to loosen up the soil and make it more of a loam. Gypsum, by the way, would probably be just as effective in doing this as the kinds of lime first advised. You would, of course, put more lime and gypsum where the soil was worst, and little or none where it was all right. There is no way for even an expert to analyze soils quickly and easily and without a good deal of laboratory equipment, and naturally there are no treatises on the subject, though there are one or two short cuts to help learn several things about the soil. It might make you feel happy to know that a favorite saying of Prof. E. W. Hilgard, the pioneer in California soil study and a world authority on soils, was that he would sooner have the ideas of an experienced and successful farmer on some soil than that of the best soil chemist that ever lived.

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This does not cast any reflection on soil analysis, however, for there is nothing better to know than ones soil, from a chemical and physical, as well as from a practical standpoint. Although you will probably never learn to analyze soils, you will get great advantage and pleasure in observing different soils and their treatment under different conditions and in reading everything you can find on the subject.—D. J. W.]



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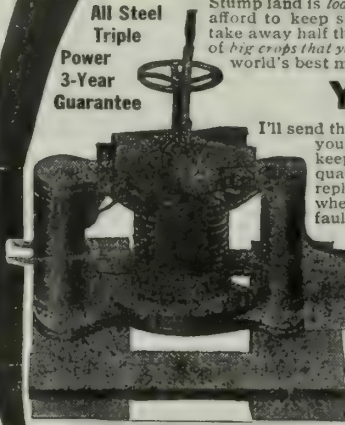
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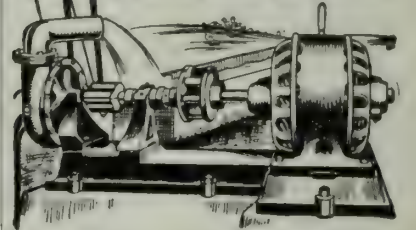
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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 4.

SAN FRANCISCO, SATURDAY, JANUARY 24, 1914.

Forty-Fourth Year.

WOULD A HOG BOOM PAY?

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

It is said that every man has his weakness, and if we were to apply the same thing to states it would be necessary to call California's hog shortage one of her weaknesses, this being more especially true in face of the present so-called meat shortage, that is not only a local problem, but one of world-wide importance.

At the present time we have somewhere near 800,000 hogs in this State to draw from for the butcher trade, while the amount of pork consumed amounts to a great deal more, or in other words, we are only raising a very small percentage of what we consume, some claiming one-third, and some less. Unfortunately we have no exact data to figure by, but everyone knows our imports are large.

One unfamiliar with the industry would naturally suppose that with such a shortage of home-grown pork there was one of three things the matter, either prices had been at some time recently very low or uncertain, or that our consumption had increased faster than land development, or lastly, that some terrible plague such as cholera had made big inroads on the production.

The truth of the matter is prices for the past 14 years have never gone below 7c. f. o. b. San Francisco and during the month of March.

never had State Library 7-1-14 place affected with the dreaded disease. With aid of hog cholera serum there is little to fear from this source as the results of its use have proved very satisfactory in controlling the disease.

With such an array of facts as to why there should be more hogs grown, it is hard to see what has been the cause for our shortage. Some may say that this is not a hog country on account of it's not being a corn country, claiming that all of the Eastern States where hog raising has become supreme were first noted for their corn.

In view of past experiences with corn growing here there is no reason to say this is or is not a corn State, as in some sections fine corn may be grown, while in other places very discouraging results have been experienced. To offset any apprehension regarding fattening feeds, however, both barley and Kaffir corn can be most profitably grown in almost any location, and there are many of our farmers who claim that as good results are obtained from the latter of these feeds as can be had from Indian corn.

Although some kind of grain is essential to profitable hog raising, it is nevertheless true also that abundant forage crops have a great deal to do with production and in this respect California does not need to take her hat off to anyone, for to

use a slang expression "we're the people that put the ALF in alfalfa and have been doing it ever since."

Not only have we an abundance of forage feed in the way of alfalfa,



Grand Master Lee, University of Nevada



Berkshires at Calla Grove Farm, Manteca.



Pasturage Which Makes Big Hogs.

1910, they even touched the extreme price of 11 cents. Anyone at all acquainted with the development of the State knows that the amount of land suitable for swine raising has been increased at a faster rate than the percentage of increase in population, so that if all of it had of been raising its share of pork, there is every reason to suppose that production and consumption would be more evenly balanced.

As to diseases, it is true that the cholera has caused some losses and will very likely be the cause of still more, but the outbreaks have been very light when compared with that found in Eastern States, where the hog is considered supreme. In this respect it should be said that cholera in this State is usually the result of poor management on the part of the owner, or as in some cases, the man whom he may have purchased his stock from, for there are many of our larger raisers, who have been in the business for many years, that have

but there are many sections that furnish large quantities of wild feeds. Another feed we have in large and increasing amounts is skim milk and this with the alfalfa at hand should make our pork production one of the greatest live stock resources we have.

To further show what the conditions are from a market standpoint we quote from a representative of one of the largest meat packing houses on the coast, who said, "It is a well known fact that the California hog is not the equal of the Eastern hog. There are a good many explanations and theories why there is a difference in the quality of the pork between this State and the Middle West, the chief one perhaps being that comparatively little corn is grown to feed the hogs in this State. Even considering this fact there are not enough hogs raised in California to supply the local demand for fresh pork."

(Continued on Page 117.)

Pacific Rural Press

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E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Jan. 20, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka .....	.....	.....	21.81	...	...
Red Bluff	2.84	20.95	12.59	52	36
Sacramento	1.40	12.44	9.31	54	40
S. Francisco	2.74	17.90	10.87	54	42
San Jose	2.32	11.40	7.89	58	36
Fresno	1.65	5.94	4.66	58	40
Independ'ce .....	.....	.....	4.59	...	32
San L. Obispo	4.74	17.01	8.96	58	38
Los Angeles	4.55	9.24	6.85	62	44
San Diego	.88	8.93	4.53	70	44

The Week.

The weather continues all right so far as soaking to bedrock goes, but there is a lot of land which needs plowing and seeding, and clear skies for a week or two would be very acceptable. There is also much orchard and vineyard work which should be put ahead. In order to realize all the joyful prophesies which are being indulged in, it is quite necessary to do some work, and if Father Ricard will kindly wipe off the face of the sun and let him blaze away for awhile, we will all be very grateful.

The joyful outlook for the year seems to shine undimmed from the countenances of the automobile men. They are rejoicing that California is beating her own record as the leading motor State—away from New York, perhaps. Certainly California agriculture does more for motors than the farming of any other State does. In California during the year of 1913 (excepting December), 31,346 motor cars were registered by the Secretary of State, against a total of 29,228 during 1912. Adding 300 cars for December, the year 1913 shows a net gain of 2418 over 1912, which was the record breaker at that time.

California farmers do not buy many of the swellest cars; they choose the get there and stay there kind, and they use lots of them. Dealers are counting upon a great trade in the spring, and we are glad that they note that farmers "will not buy extravagantly." But we wonder how many farmers are included in this computation: "Statistics from Washington about the income tax showed that there are probably in the United States 60,000 people with an income of \$15,000 a year or more. Every such person can afford to own and maintain a motor car of the highest grade. Present

production of such motor cars in the United States is only 10,000 a year, or a car for each prospective buyer, every six years."

Oh, well; we are calculating that it will take us about six years to get into that class—so don't bother now; give us a chance to get to work.

A Vealy Notion.

Our stock-growing readers will be amused at the great idea which has dawned in the minds of the hotel men and how their patriotism is fired by it. It is telegraphed from Atlanta that the hotel stewards of that city have adopted a resolution declaring that no more veal will be served at hotels there. "Veal on the table means the slaughter of calves," said an advocate of the no veal movement. "That means the cutting down of prospective beef cattle. This is one cause of high prices. I hope this movement will spread over the entire nation." Those hotel stewards may know a lot about making tenderloin steaks out of the "round," but they do not know much about farming. They do not know, for instance, that the chief reason why a calf gets a few weeks of life is the chance for veal. Boycotting veal will not make the calf into a steer; it will pinch him out at the beginning. The chief supply of veal comes, of course, from the dairy herds; there is seldom place in a dairy herd for beef making; so far as the life of the calf goes, it is really nip and tuck between veal and nothing. To cheapen the meat supply is, then, to make a better demand for veal and to pay a little more for it, so that the dairyman can afford to bother with it. This is the way they get a large amount of their fresh meat in Europe. We nearly broke our teeth to pieces last summer by their slipping down on veal. If Europeans wish to change from white veal they go to white fish—of which we also became profoundly weary. We do not write, then, from any love of veal, but we are sure that the way to get cheaper beef is to teach the people to eat more veal and mutton. There is, of course, a line of "range calves," and killing them may reduce the population on the beef route, but this sacrifice is relatively small and likely to be less and less on good ranges, and the way to do what the hotel stewards desire is to serve more veal rather than less of it.

Calves and Sheep.

In fact, this killing of range calves, according to an address by J. E. Poole of Chicago, at the National Wool Growers' meeting in Salt Lake last week, stopped three years ago. He said that for the last five years the west had been marketing ewe lambs in the same reckless manner as it sent heifer calves to the butcher from 1900 to 1910. Good authorities estimate that 80 per cent of the ewe flocks of the West are over aged and that a bad winter would scatter their carcasses over the ranges, thus precipitating a mutton scarcity that, in any event, cannot long be delayed. One short lamb crop," said Mr. Poole, "would put both lamb and mutton in the same category as lobster and terrapin."

That is surely a picturesque way to put it. It is certainly time that all available land, including the forest reserves and all land which can be put to maximum capacity by irrigation and alfalfa, should be stocked up.

Imported Beef for Americans

We are glad again that we have Mr. Jastro's assurance, as printed in the RURAL PRESS of last week, that the world has not enough beef

to interfere with our own beef-making industries. That is the way we wish it to work out, but we are so timorous about it that we need strong support. For the highly capitalized trade in meat seems to be able to adjust itself very quickly in this catch-as-catch-can struggle between home products and imported substitutes. It is telegraphed from New York that a syndicate of American capitalists, whose identity has not been disclosed, had leased for twenty-one years, with privilege of renewals, four large warehouses from the New York Dock Company, with an extensive water front, giving facilities for steamship piers and railroad connections. These arrangements are for the importation into this country of thousands of tons of beef and other meat products from the Argentine Republic, Austria, and New Zealand, and the account closes: "and within a year, when the big beef shipments begin it is expected the competition will cause an appreciable reduction in meat prices." That last proposition seems very doubtful. It rather looks as though we were arranging for a lot of importing beef barons instead of the old bunch which handled the local product, and we cannot see where we are likely to be any better off unless growers organize to promote and protect their own products.

The West Is the East.

We were looking at a novel the other day of which the title is "Black is White," and we thought how shocked our ancestors would be at a book with such a jolly lie, you know, for a title. To us, we confess, the name is simply picturesque and, must we add, attractive? And this reminds us that the President of the United States, in a recent address at Mobile, declared that the West is the East—and what to you make of that? But we will first let the President put it in his own way: "Do you realize that by the opening of the Panama canal New York will be nearer the western coast of South America than she is now to the eastern coast of South America? Do you realize that a line drawn northward parallel with the greater part of the western coast of South America will run only about 150 miles west of New York? The great bulk of South America, if you will look at your globes (not at your Mercator's projection), lies eastward of the continent of North America. You will realize that when you realize that the Panama canal will run southeast, not southwest, and that when you get into the Pacific you will be farther east than you were when you left the Gulf of Mexico. These things are significant, therefore, of this: that we are closing one chapter in the history of the world, and are opening another, of great, unimaginable significance."

We take it that this, which is demonstrable by one kind of geography, is true in just the sense that President Wilson indicates; that is in the significance of readjusting the old relations of the East and the West. Civilization having belted the globe in its western movement, will now return upon itself; moving eastward, lifting new standards and depositing new accretions of inspiration and understanding along its eastward way. The West, by its broader view, more buoyant spirit and greater confidence, born of successful adventure and enterprise, will modify Eastern motives and enlarge Eastern conceptions until the West, in a sense, becomes the East. Because of our craft we may be allowed a horticultural metaphor; the tree

of civilization has grown into the western gale, as some real trees actually do, and extended its branches, by the propulsion of root sap, westward. From time to time, and especially when its seasonal extension is complete, the sap, elaborated by the leaves, flows back eastward to its birthplace in the root, distributing all along its course new enlargement and strength—twig and branch repaying to the root its debt with interest. Thus, all along, the human race has been advanced by its movement on the earth, and its greatest attainment is the last, which the West is now distributing at the East.

California the England of America.

We rather like these geography lessons by President Wilson, with our own amendments, of course, and we take another. He said: "Columbus sailed for Cathay and stumbled upon America. With that change in the outlook of the world, what happened? England, which had been at the back of Europe with an unknown sea behind her, found that all things had turned, as if upon a pivot, and she was at the front of Europe; and since then all the tides of energy and enterprise that issued out of Europe have seemed to be turned westward across the Atlantic." This experience of England in her relation to Europe is to be repeated in the experience of California in her relation to America. California, from the point of view of a transformed Pacific, becomes to the development of the new ocean the nearest East instead of the farthest West, as she has been hitherto. Because of the Panama canal, California finds her attitude to the world's affairs changed, just as England's attitude was changed by the discovery of Columbus—with this difference. It required a couple of hundred years for the North European races to gain ascendancy in America over the South European races to whom the benefit of the new world first accrued. At the opening of the Pacific the descendants of North European races are officiating as creators of the new regime and ready to enjoy the fruits of their enterprise. Of these, Californians, with their thousand miles of seacoast and their London of the Pacific already growing around San Francisco bay, are naturally leaders, by virtue of geography and psychology.

Queries and Replies.

Querists must submit full names and addresses.

Beans and Onions.

To the Editor: I have about four acres of excellent sandy soil on part of which I should like to plant onion seed for a mature crop of onions the first year. The land has been in pasture for some twenty years. It was plowed last spring, and on one end of it several rows of beans were planted, under irrigation. The beans grew finely and there also appeared an enormous growth of erodium. I may not be able to get any barnyard manure. What fertilizer should be used? Can you refer me to literature on onion culture, also beans and bean culture in California?—H. A., Chico.

It will make you pretty busy to keep sight of onions grown from seed in the field in land which grows such a lot of filaree (erodium). It would be easier to kill down a lot of it by plowing and disking until April, and then set the field with transplanted seedling onions from a seed bed which you can start in February, according to the conditions of soil and

weather. On the whole, we would prefer to put the whole piece in beans the first year and keep cultivating to clean the land for a try at onions next year. Beans will largely kill the weeds in their rows, which onions will not do and therefore require a lot of hand work in the rows, which is very expensive. All the successful methods of handling onions from seed in place and with transplanted seedlings, also the California ways with beans, are given in detail in our book "California Vegetables."

If you do conclude to try beans instead of onions from seed, you can wait until March to plow under the growth of erodium. After that disk the land to kill more weeds and keep a good surface in preparation for the bean planting, which must wait until after danger of frost is over, early in May. Then keep down the summer growth of weeds by frequent cultivation. We apprehend that land which gives such a free growth of erodium will bring you plenty of beans without fertilizing; at least, we should try it that way at first.

Manure and Tree Planting.

To the Editor: Which is the best way to use manure in setting out trees: to dig the holes about 3 feet and then fill about 10 inches of manure and about 1 foot of dirt? Or just dig the holes as you want them and then mix the dirt and manure well together and fill the hole with it. Some say one way and some another. I would like your advice, as my land is of red loam and I want to give the trees all the show possible. The trees are almonds.—Subscriber, Richfield.

As a rule it is not a good thing to put manure in the hole with the tree—either below it or mixed with the earth in filling. Of course, if the manure is thoroughly decomposed, it may be put below as you suggest and covered with dirt, but unless you are irrigating there will be danger of the soil becoming too dry. If the manure is not decomposed, it will ferment and heat as well as dry the tree roots dangerously. Besides, it costs altogether too much to dig such holes. As for mixing the manure with the soil in filling around the roots, the same dangers are likely to be encountered, and besides, too much manure may come into direct contact with the roots. If you are planting soon, plant the tree in clean soil and spread the manure on top after filling the hole. The late rains will leach the richness and distribute it through the soil, and the balance can be worked in with the spring cultivation or left around the tree to reduce evaporation of moisture.

Judging Land for Walnuts.

To the Editor: Will you kindly give me some information in regard to some land in Sutter county? I would like to know if the soil and climatic conditions are adapted to raising walnuts, and, if so, what kind would be best?—G. L. M., San Francisco.

There is good walnut land in Sutter county and land which is otherwise. Judging the suitability of land for walnuts or for other things must be had on the basis of examination of the particular piece of land. It cannot be judged by districts, because some land may, through its depth of well drained soil, be suitable for fruit trees, while an adjoining piece, shallow and not well drained because of hardpan or water too near the surface, or something of that sort, may be not at all suitable. One has to judge of the character of the soil

by digging and boring holes to a depth of four to ten or twelve feet if feasible. Mere sight of the surface may sometimes be misleading.

Making Olive Trees.

To the Editor: I wish to know about grafting or budding seedling olives. My tract of 20 acres will eventually be planted to olives. Five acres were planted last spring. I can get all the seedling olives I want near here. They are 4 to 6 inches high and look small for grafting. I lack information as to time of year to graft them (or bud), as well as what particular method of grafting.—Beginner, Butte county.

Hitherto most of our olive trees have been made by rooting cuttings of the kind desired. Recently more has been done by grafting on seedlings, which is the common European way. The seedlings which you mention are only fit for transplanting to nursery rows, which should be done after the ground gets well warmed—earlier on light sandy loam than on heavier soil. They can be grafted next winter, when one-quarter to one-half an inch in diameter at the root crown. Grafts are put in at this point by the cleft-graft method, more carefully bound and waxed than is necessary with deciduous fruits. Full details on grafting and budding olives are given in our "California Fruits."

Nettles as a Cover Crop.

To the Editor: Can you tell me how to get rid of nettles that persist in coming up thick every winter in my orchard and fairly smother out the cover crop, notwithstanding the orchard is irrigated and kept quite clean through the summer.—S. H. P., Santa Ana.

We should make a cover crop of the nettles. Run a mower over them as soon as they get about a foot and a half high; let them make a second growth and then plow all the stuff under in February or early March. In this way you can keep the growth from getting too stemy and hard to handle with the plow. Nettles are all right for humus. If your irrigation water brings in the seed you are likely to be in the nettle business right along unless you get the ditch company to clean their ditch banks. If the seed does not come in the water your summer and winter tillage will soon clean them out.

Almond Planting.

To the Editor: Is it advisable to plant I. X. L. and Ne Plus Ultra almonds close together, say one acre of each?—Subscriber, Richfield.

You should be sure the I. X. L. is a good bearer in your locality before you plant it. It is shy in some places. Association of these and other Hatch varieties may avail something in pollination and they should therefore be interplanted. But none of these varieties help each other as much as the Texas Prolific and Drakes Seedling will help any of them. The last named varieties are counted our most active pollinizers.

Planting Trees with Root-Knot.

To the Editor: Will young trees (almond) with a knot on the roots (perhaps known as root-knot) grow and do all right, or should they be returned to the nursery for other stock.—Subscriber, Chico.

Trees with knotted roots will not intentionally be furnished to you by any reputable nurseryman. If he furnishes them by mistake he will make them good. Do not plant a tree which does not have clean roots.

Dwarf Trees a Commercial Delusion in California.

To the Editor: I have just finished reading letter by Leonard Coates in your issue of January 3rd, and will give my experience with Bartlett pears on quince root.

I have 3½ acres of rather heavy clay loam which I wished to plant to pears, so gave my order to a reliable nursery for stock which came in due time, but found they were grafted on quince root. Not wishing to delay planting I put them out—and have had two years growth and most of them have made excellent growth, too, possibly too much top growth for on passing through the orchard in November, I noticed a great many of them broken down—the largest and finest ones. On examination I found the union was not good where they were grafted and they have broken off. This happened before our last wind and storm, and now I see a lot more broken; in fact so many it seems I will have to give up the idea of saving enough to fool with.

I would like to ask if there is anything that can be done? Of course, I could top back, but would I have any better success in another year? They are all affected alike—broken short off where the union is.

I raised crops between the rows and irrigated the crop, but not the trees this year; in fact had a border thrown up against the trees to keep water away and try to induce roots from the pear, but in this I have been unsuccessful.

My idea in writing this is to seek if possible some remedy and sound a warning to new beginners who might contemplate doing as I have.—W. F. Randolph, Gridley.

[There are several things which may be cited to account for your trouble. First, the pear is a failure when it is attempted on the Portugal quince. This seems to be the conclusion of decades of experience by those who have had most to do with dwarf pears. Second, the Bartlett pear, which is presumably the variety you planted, though you do not definitely say so, has but indifferent affinity for any quince and double-working is prescribed for it when it is desired to have it on a quince root. Third, even the most diligent growers of dwarf pears believed in planting them low so that pear roots could strike from above the union. Such roots readily appear when the union is not too near the surface. Fourth, if you desire dwarf trees (and unless you do never use the quince root) you must keep them, dwarf by pruning to pyramidal or other dwarf form. Possibly a few sentences from Thomas W. Field, whose "Manual of the Pear Tree" published in 1859, when the dwarf habit was at its height in New England and New York, may hit you. He says: "The office of the quince root is being wholly mistaken. The tree is planted with the junction from three to eight inches above the ground and in addition to this mischievous practice the tree is not unfrequently trimmed up as a standard. This method of framing gives the top when large, a great lever power at the ground, and the trees, unable to resist the force of the wind, often part at the junction of the bud with the stock. If the tree survives it is often a monstrosity of growth, the pear swelling out to twice the diameter of the quince."

This was written more than half a century ago at the least. It was also about half a century ago that pioneer fruit planters of California decided that the pear tree should be grown as a standard on a pear root and stopped sharply the use of dwarf trees which were planted almost everywhere in the early days of California.

We have no use for a dwarf pear tree, except in a garden where it will be pruned to dwarf form or trained on a wall or trellis. In such a place dwarf trees are lots of fun, but, commercially, if Californians had not abandoned dwarf trees as they did, the California pear crop could still be carried around in fruit baskets instead of filling about 5000 12-ton fruit cars a year in fresh, canned and dried forms.—EDITOR.]

INTER-CROPPING BY BEGINNERS.

To the Editor: We have a small place in the San Ramon valley. A man recommended by Prof. Wickson reported on the soil, etc., and stated that we could raise anything which could be grown in California. We are setting it out to orchard now, apples, pears, almonds, olives, and a variety of other fruits for family orchard, also berries. Any suggestions as to what would be best to raise for income purposes while waiting for the orchard to come into bearing would be very acceptable to us. There was plenty of moisture in our soil last summer during the dry season, so irrigation is not necessary for all things, but we give thorough cultivation, and water where needed. Our location is on the hillside, part of the land quite steep, but most of it has an attractive slope.—Owners, San Francisco.

[It would be of very questionable profit to you to plant anything between your young orchard trees, unless you are living on the place and can in that way make use of vegetables and other plants which could be grown in the centers without coming too near to the trees. One great problem in growing inter-crops is in disposing of them.

Probably you could get good results with potatoes or beets or other hardy vegetables planted in February, or with tomatoes, squashes and possibly canteloupes planted when frost danger is over. But we are not at all sure that you could get enough out of these plants to pay for the cost of growing, if you have to hire all the work done.

On such moist land as you describe, you could get a good stand of alfalfa over the centers, allowing a clear strip of four or five feet of cultivated land in which the trees stand. But unless you have poultry or cows to use alfalfa it is doubtful whether it would pay the cost. Especially on sloping lands would it be desirable to cultivate well and give the young trees the advantage of all the moisture which may be available.—EDITOR.]

A reorganization of the Department of Agriculture is expected soon. Secretary Houston plans to do away with many bureaus and concentrate the work of the Department under five heads. The Secretary is asking Congress for more funds to help along farm marketing, farm demonstration and farm management than have yet been secured for those purposes. Sec-

retary Houston, by the way, will be in San Francisco soon with Secretary of the Treasury McAdoo on work connected with the new currency law.

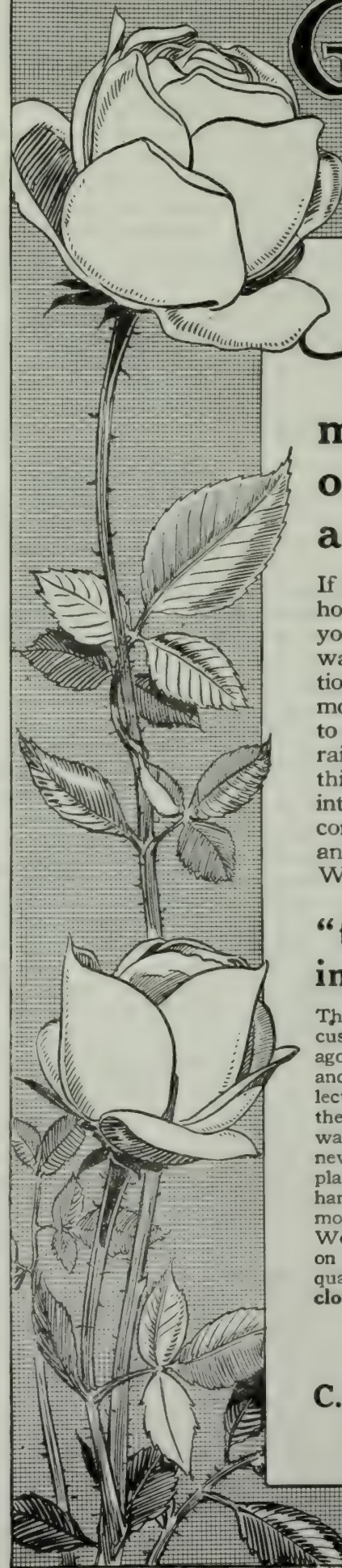
Officers of the Farmers' Union at

Napa have been elected as follows: President, H. L. Bell; vice-president, W. J. Stearns; secretary, J. E. Lowrie. The union has built its new three-story packing-house north of Napa the past year and it is now in operation.

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For 1914



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That's what an enthusiastic customer wrote us not long ago. And if the care, time and money used in their selection count for anything, they really are. We are always on the lookout for the new and beautiful in flowers, plants and trees, and for the hardiest, most profitable and most delicious in vegetables. We are the largest seed house on the Pacific Coast. Headquarters for alfalfa, grasses, clovers, etc.

Correspondence Invited.

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Another Old Thing Renewed.

We protested recently against the discussion of the jelly plant, roselle, as new in California. The same thing will hold against the surprise which some people are manifesting over the Chayote which has been grown in southern California for more than twenty years. It is possible of course that the present exaltation of the plant may be of some commercial advantage and is therefore desirable. We surely can grow volumes of this product if people can be taught to buy it. The exaltation which comes to us from Washington is as follows:

This tropical vegetable, which resembles a white squash, may be cooked in various ways and the excellent dishes which the people of Central America, and to a lesser extent the chefs of the hotels of a few American cities, prepare from this plant appeal immediately to the taste of almost every traveler.

The chayote, pronounced ka-yo-tay, and which is known under a number of other names, is now recommended for experimental purposes by experts of the United States Department of Agriculture. Although it was introduced in this country a number of years ago, its development has been slow, but the government expects to be in a position next fall to furnish seeds of the plant to a large number of persons who might wish to experiment with its culture.

The chayote is a most peculiar vine in many respects. In the first place, it is one of the few plants whose fruit is planted whole for seeding purposes instead of merely placing the single seed into the ground. The vegetable is almost pure white, pear-shaped, and weighs from 10 to 20 ounces, each being about the size of the largest pear which comes on the market.

The chayote vine is perennial, unlike most other vegetable plants, and produces fruit its first year. A California farmer recently sent to David Fairchild, in charge of the office of foreign seed and plant introduction of the Department of Agriculture, several fruits from two vines—the only ones he had growing—along with a brief statement of the yield of each vine. On one of these vines about 350 fruits were grown, averaging more than 10 ounces each in weight. The vegetables retailed at 15 cents each on the Los Angeles market, which would mean that the farmer could sell them in large quantities at 3 to 5 cents apiece, which would pay him \$3 to \$7.50 to the vine.

No attempt has been made to push the extensive development of the culture of the chayote, because it is generally recognized that it will be some years before Americans are educated up to the value of the vegetable, and overproduction in the beginning of its culture might discourage the plant grower. The vine will not produce fruit north of the Carolinas. To encourage practical experiments the suggestion is made that farmers grow two or three chayote vines around their houses and have enough of the vegetables to supply their families.

OIL TO LINE RESERVOIR.

To the Editor: Will you kindly advise me if it would be practical to cover the bottom of a reservoir with heavy oil to overcome seepage—say such oil as they use on the roads in

California. Or would the oil rise on the water and go out on the alfalfa when irrigated?—W. H. E., Kendall, Kansas.

[A reservoir lined with oil such as is used for roads gives entire satisfaction, and there are a number so constructed in this State. Care has to be taken in applying the oil to get an even distribution. Furthermore, the oil has to be thoroughly mixed with the soil for several inches deep and rolled hard. Under these conditions there is no more oil taken up from the bottom than there is from a road in a rainstorm, and that is not enough to be noted and can certainly be disregarded as far as alfalfa irrigation is concerned. Possibly the first time the reservoir was filled it might take off an appreciable quantity, which would depend largely on the kind of a job of oiling that was done, but later no trouble would be expected, and a very impervious bottom would be secured. —EDITOR.]

FIRE OUTLOOK IN A TREE-TOP.

The most ingenious fire lookout station on California forests during the current fire season is said to be the home which Forest Guard Howard Tyrrell built for himself in the top of a yellow pine on Bullion mountain, Klamath National Forest, 100 feet above the ground.

Tyrrell was assigned to the Bullion mountain lookout by the Forest Service in co-operation with the California Fruit Growers Supply Association, the Association furnishing him with supplies and subsistence and the Forest Service paying his salary.

Tyrrell located his tree home soon after the opening of the fire season. He erected sixty feet of ladders up the trunk of a giant pine, from which point limbs afforded him an opportunity to climb fifteen feet higher. Here in the forks, 75 feet from the ground, Tyrrell built a platform about eight feet square upon which he spreads his bed and spends each night during the fire season.

For a day lookout he climbed 25 feet further up and erected a smaller platform where he sits during the day. Five or six feet above this second platform the forks of the tree dwindle to a diameter of about five inches each. These tops Tyrrell sawed off, and on them he spiked a beam where he clammers when smoke appears and sights his fire with an absolutely uninterrupted view of the surrounding forest.

A number of visitors have climbed to the first platform, and three or four have made the second. No one but Tyrrell, however, has ascended to the crosspiece in the treetop.

Next year this enterprising fire guard expects to build a small house with glass sides on the lower platform, where the telephone is hung. With cooking apparatus installed, Tyrrell's trips to earth will be rare.

"It gets a little lonesome up there once in awhile," said Tyrrell, "but there's plenty of squirrels and birds around. Maybe another year I'll learn how to eat pine cones and sing."

A new tract of 25,000 acres of the Chowchilla Ranch was put on the market January 15.

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50,000 Zinfandel on St. George, now ready for delivery.

BARTLETT PEARS, FRENCH PRUNES, MISSION OLIVES, FORMOSA PLUMS, WALNUTS ON CALIFORNIA BLACK.

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1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station \$1.96½ gave \$22.11—over 1000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 lbs. of phosphorous, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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Reorganizing U. S. Department of Agriculture.

Reorganization of the Department of Agriculture by abolishing all of the present thirteen bureaus and substituting four or five large offices, grouping all applied activities, is contemplated in a provision carried in the agriculture appropriation bill, which the House Committee on Agriculture almost has completed.

While the details are left to the discretion of Secretary Houston, he and Representative Lever, chairman of the committee, have conferred over the plan for readjusting the work of the department so as to eliminate all lost energy that possibly can be corrected and the general plan is understood. The only obstacle to the concentration plan is the possibility of a point of order being raised in the House on the ground that the provision constitutes new legislation that cannot be carried in an appropriation bill.

The readjustment is expected to include the concentration of divisions into four groups, each under a single official, as follows:

Regulatory or quarantine work, dealing with such matter as insecticides, meat inspection, etc.

Scientific and research work, to comprehend everything that comes under those general heads.

Demonstration or extension work for farmers which is to be radically expanded.

Administration to handle the department executive affairs, including the offices of the secretary and assistant secretary, chief clerk and disbursing officer and similar officials.

The agricultural bill will also carry an appropriation that will reach to the \$19,400,000 asked by Secretary Houston to enable him to acquire and diffuse information on subjects connected with the marketing and distribution of farm products, a project initiated by Chairman Lever.

COMMERCIAL PEPPER GROWING.

To the Editor: How will growing large peppers for sale green and dried do in the Paso Robles region?—R., San Francisco.

[Practically all the commercial peppers, excepting those grown everywhere in market gardens, are produced in the vicinity of Anaheim, Orange

county. That district has a very long frost-free season and a certain amount of moisture in the air which seems to favor this plant. It would not be wise to undertake commercial production in the Paso Robles district without having tested the behavior of the plant on a small scale. It would be necessary to plant very much later at Paso Robles because of the spring frosts, and whether the season is long enough to get a full development of the plant and drying in the open air, as they do at Anaheim, before frosts in the autumn, would be the point to be determined. Peppers are started in the seed bed and plants set out in rows far enough apart for horse cultivation, say, three or four feet, so that the ground may be kept well cultivated during the growing season. If you cultivate one way, the plants can stand two feet apart in the rows. Grown in a good locality and handled expertly, the crop is sometimes quite profitable, but the demand is limited and the Anaheim district seems to have no difficulty in fully supplying it. For these reasons also, you should proceed carefully.—EDITOR.]

THAT WONDERFUL AVOCADO

To the Editor: Your reference to that remarkable Avocado tree at Whittier in the issue of the *Pacific Rural Press* of December 27, 1913, deserves attention. Some big stories about it have previously appeared, but none quite equal to yours. I have before me an editorial published in the *Los Angeles Herald* on Friday the 13th of June, 1913. (Note the date). At that time the tree is said to be but eight years old and is alleged to have born the previous year (i. e. 1912) \$3200 worth of fruit and buds.

I have also at hand a copy of the *Los Angeles Examiner* of December 17, 1913 containing an article about the same tree, in which it is stated that it is but six years old and the income over \$3200.

Now comes your editorial, in which the tree remains six years old but the income for 1912 has increased to \$8206. No doubt the tree is a very wonderful one indeed but such exaggeration make them who know the truth very very weary.—C. P. TAFT, Orange.

[Mr. Taft evidently does not know

how fast boom trees grow in the newspapers. He has been seriously engaged for many years in growing trees in the ground and that is not nearly so fast. We took the figures from a dispatch telegraphed from Los Angeles and decorated them sufficiently we thought to make them recognizable as belonging to a newspaper tree. We have a habit of doing that whenever we are a little weary ourselves.—EDITOR.]

DOLLARS IN MANURE.

We are told says the Virginia Department of Agriculture that there are 20,000,000 horses and mules in the United States, 62,500,000 cattle, 50,000,000 hogs, and 50,000,000 sheep. A horse will discharge aside from what is lost on the public high ways, seven pounds of nitrogen, thirty-five pounds of phosphoric acid and seventy pounds of potash. Counting these elements at their market value every horse and mule in the United States annually produces \$16 worth of manure, or for the total number of horses and mules the value of the manure given is \$320,000,000.

In the course of a year the average farm cow will produce about one hundred pounds of nitrogen, seventy pounds of phosphoric acid and one hundred and five pounds of potash. Calves, of course, do not produce nearly so much, but it is safe to say that the average amount produced by every calf in the United States is fifty pounds of nitrogen, 35 pounds of phosphoric acid and fifty pounds of potash. At the market value of these elements given by each cow in the country is \$13 per head, or a total of \$812,500,000.

The average hog produces twenty-five pounds of nitrogen, twelve pounds of phosphoric acid and nine pounds of potash in a year. The market value of the elements produced per head is \$5.45 or \$252,500,000 for the total number of hogs in the country.

The average sheep produces twelve pounds of nitrogen, six pounds of phosphoric acid and eight pounds of potash. On the market this would be worth \$2.75. The total number of sheep in the country then produced \$137,500,000 worth of the elements that make fertile soils.

Under the guidance of members of the agricultural staff of the College of Agriculture, an agricultural club has been organized of students at the Morgan Hill High School.

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A System of Liquid Credit on Land.

To the Editor: Why must a State, a county, a city, a school district or any political subdivision which has the power to assess itself go into the money market to sell its bonds, yes, pay some brokers a big fee to find a market for them. Of course, the answer is, that the per cent is low.

You, as one of a committee which has been to Europe to study how the farmers there are helping each other by co-operation to finance themselves, may perhaps also have observed how political subdivisions are getting their funds for needed improvements. I think its about time that something may be done in this country whereby we can do our public work without having to pay for it two or three times over.

J. J. Hill the railroad king said in a speech not long ago that the country was waterlogged with bonds.

Albeon W. Small, Dean of University of Chicago at a meeting of the American Economic Association said: "The overhead charges of the capitalistic system are the cause of the increased cost of living."

Our inquiry into the central problem of our time will amount to nothing until the leaders of our thought and action consent to a policy of candid and thorough inquiry inquiry as to whether there is something radically mistaken in the capitalistic system itself.

Now when we are paying for today's dinner we are paying also for dinners served and paid for long ago, and we are paying also installments on dinners that will be served generations hence, yet we marvel at the growing size of the bill.

We are still paying interest on four hundred and forty-one millions of national debt incurred before 1865. Interest payments already have equalled the original loans twice over.

Through continuance of the annual payments which do not reduce the principal, we are now discharging these loans the third time. Americans for the next fifty years will be paying interest for portions of the Panama canal, and at that time will have repaid the original borrowings, but the principal and interest still will be just as much due as if no payments had been made.

Improvements of railroad terminals completed or projected in various cities are bonded for \$100,000,000. The interest will be a permanent charge upon the earnings. It will press down upon wages and lift demands for higher rates. Our industries will repay these loans over and over again to the children and children's children of the original lenders.

He pointed out that the fallacy of treating capital as if it were an active agent and of crediting income to the personal representatives of capital irrespective of their actual service; the fallacy of incorporating the fallacious capitalistic principle, thus promoting the legal person to immortality; the fallacy of a system of inheritance which assigns the powers and privileges of incorporated capital to sentimentally designated individuals.

This creates hereditary economic sovereignty, which eventually must become more intolerable than the hereditary political sovereignties overthrown by revolution.

Now Mr. Editor it seems to my way of thinking that if we must bond ourselves instead of paying a direct tax,

we should be able to place our bonds with the United States Treasurer, and he issue to us National Notes which would be legal tender and which we could repay in a long series of years in annual payments at a very small interest.

Our laws prevent us, if I am right, from bonding for more than 10 per cent of our assessed value, so our collateral is absolutely good. All the expense the United States would have would be the printing of the notes and keeping the accounts. This would not be fiat money, but backed by the best collateral in existence for there never was and never will be better security than the real estate and its improvements thereon. — A. HENNINGSEN, Fresno.

[This certainly is a very suggestive communication. The proposition may be considered very rational some day. We do not know anything about forms of money not based upon equivalents approved in the world's experience and at present we have no time to dream about them. All the forms of credit we saw in Europe deal with what is now recognized as real money and they have accomplished their notable results not by making new forms of money, but by reducing the rent of real money, and the cost of handling it, so that the borrower has a chance to get the use of it at a fair price. We have so much to do in this country to secure that result that we shrink from running out on sidings which may land one in a sand cut. As for bonds we do not share the apprehension about bonds as such: the things to prevent are over-bonding, extravagant expenditure of the proceeds from their sale, high rates of interest and abolition of excessive promotion cost and "melon-cutting". Bonds are the common winners of money for long term land credits in Europe and they are fair and economical. We do not object to coming generations paying their share of great national expenditures largely undertaken for their benefit. What we have to do is to see to it that they do not pay too much.—EDITOR.]

REMOVING BITTERNESS FROM OLIVES.

To the Editor: I have been reading your book, "California Fruits," and think it the best guide for orchardists, especially beginners, that is published. I had experience in the East, but find it so different here that I have to learn it all over.

I have a small orchard in this valley, where the best peaches are grown in southern California. I have olive trees full of fine olives as large as Damson plums, and I undertook to pickle them in the manner stated in your article on olives. I followed your directions to the letter and now have them in the last brine, but they are still too bitter to use. I used the lye as directed. What can I do with them? They are large and thick meated and that may be the reason. Should I have used more lye?—F. M. O., Poway.

[It is evident that your lye was not of sufficient strength or the olives were not treated sufficiently long to remove the bitterness. Possibly this may have been due to the size of the fruit. In pickling, one has to be governed a good deal by judgment, by cutting the fruit to see how far the lye has penetrated (for you can usually

tell by this) or by tasting to show that it has been sufficiently removed. There are so many different conditions that it is not possible to state any formula which will answer with all fruit. You will have to continue your investiga-

tions with the assurance that the general process is correct. The application of it may have to be modified. You surely should have used stronger lye or have allowed it to act for a longer period.—EDITOR.]



Beware the
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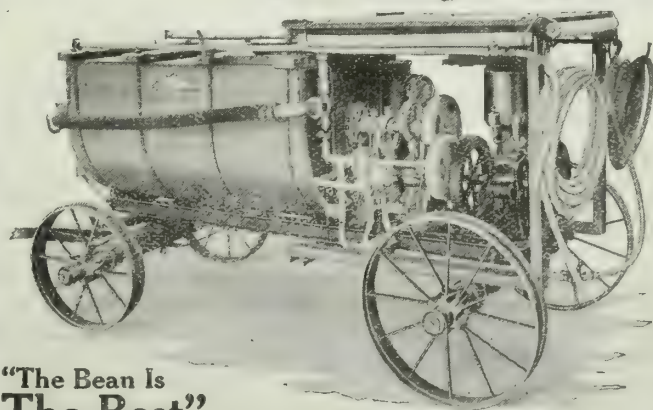
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Pooling Issues for Prosperity.

To the Editor: I have followed with a great deal of pleasure and considerable mental profit, your dissertations these several months on farm finance and credits.

Of course it is trite to say that it is one of the live topics of the day and when just that right scheme has been hit, wonderful development is to be made.

Your editorial in the issue of Dec. 27th, 1913, "Money to Start Young Farmers" and particularly that portion quoting Dean Hunt has set me to thinking a little more concretely. Hence this writing, and should you find anything of value in it the credit will belong to yourself.

POSTAL SAVING FUNDS.—Now, looking the proposition square in the face, why couldn't Postal Savings Bank savings be loaned to needy young farmers? Before we can consider pro and con the question, rightly, I believe we must examine and have in our minds something as to what kind of men these young farmers are that will want to use this money.

DIFFERENT KINDS OF YOUNG MEN.—After considerable thinking on the matter I have classified them, roughly and broadly, there are always exceptions, in three divisions:

1st. The young fellow with a fair farm experience, some business and financial judgment and already successful in a small way—ready to try his wings so to speak.

2nd. The fellow with farm experience and little else, so far as business judgment is concerned. Largely the son of hard working but poor father who never could some way seem to get ahead. Include also the renter who has just about made ends meet. The "hired man" on the farm who hopes to become a hirer of men.

3rd. The fellow with no farm experience, but a fairly broad business knowledge—largely the city man who has a piece of "God's Country" and a big desire to try using it. The clerk and salesman, the bookkeeper and accountant, the mechanical man and commercial traveler will all come in this group.

DIFFERENT CREDIT STANDING.—The first man will have little trouble getting what money he needs. We all like him. But business caution and 7 to 8% interest makes him wait for a better day very often.

The second man will have a much harder time getting the money. The money lender looks at his narrow life (I am not ridiculing or criticizing, we have to face the facts): his horizon had been contracted. The dollars he has accumulated have been bought with self-denial. His environment has given him a narrow view of life and the world. With several thousand dollars suddenly at his command one or two things are liable to happen. Either he goes crazy, figuratively, and handles the money as though there was no bottom to the sack and presto he is done for and so is the lender; or he cannot expand to the money placed at his disposal which is almost as disappointing.

The third fellow, shrewd in business and financial sense, but no farm experience. He will buy experience dearly at best and with considerable money at his command he is liable to attempt to show the world what a wonderful man he is, and is very liable to

wind up by fizzling out, or wind up with little money and plenty of experience, ultimately making good, but a rather risky proposition to do banking on.

Now WHAT'S TO BE DONE?—Three fellows, all good, and all no good. Why not amalgamate them. Tie their interests up together. Make them responsible one for another in a measure and get one whole live sensible experienced allround man; and then put a few older wheel horses in the proposition just to tone it up.

Now to the "bee in my bonnet" as to how. Since we will not loan to the men individually, why not collectively? Simply this: Let a bunch of men in a district bond their land with a blanket mortgage by organizing a company or association and have Uncle Sam loan his Postal money to the association and take the blanket mortgage and the association loan to the members. The details of operation should not be hard to work out satisfactorily. Each man gets what he needs and the whole community is interested financially through the association to see that each man uses what he gets wisely, and each man wants to act up to about what his community expects—(that is human nature)—the consequence is that you get a progressive and a wide awake co-operative set of people. The difference between interest at 6 to 8% and principal to pay in addition, and 6% including principal can go, at least part of it into community thoroughbred stock, co-operative marketing arrangements, or whatever is most needed.

THE APPLICATION.—Would this take a big bunch of land and people? I think not. Look here: 5 to 10 sections of land or 3 to 6000 acres; one to three miles long and three miles wide. Ten to 40 acre farms. Seventy-five to 100 men. One hundred dollars bond per acre. One quarter to one half million dollars. Every man twenty-five hundred to five thousand dollars for equipment stock. Would that community go ahead? Would Uncle Samuel be secure? Especially if a few of the older more settled heads, the wheel horses of the community take a few thousand. Most of them could use it to advantage. And their judgment and sound sense would help a lot. In place of Uncle Sam loaning his Postal Savings money to the banks at 2% and the banks loaning to the farmer at 6 to 8%, we would get direct connection; really cutting out a middleman. More than likely some of our same banking friends will want to get in the direct proposition, so we would get to use their brains anyway. Ultimately they will get to handle a whole lot more money and prosperity will reign just a real California rain, such as we are having this month.—J. L. BOWDEN, Benicia.

[This is a good thoughtful contribution and we hope readers will think about it and discuss it. We will only say that it holds the essence of systems which are working out well in Europe—these which rest upon the combined wisdom and character of the neighborhood. The foundation of it is altruism and the neighborhood spirit, guiding and ruling individualism. Can we do it in this country? That is the question?—EDITOR.]

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Driving Down and Washing Out Alkali.

To the Editor: Having a good deal to do with alkali ground, and trying to raise grain and alfalfa on it, I will tell my experience. I had a piece of 40 acres and experimented with it for about 10 years, every acre of which cost me twice as much as it was worth. I finally struck on a scheme, which worked out finely, and the first season after I put my scheme into effect I got a good stand of alfalfa.

My ground was level and had fairly good drainage, that is, it would drain out two feet deep from the surface, which must be in this case. I first took a two-horse plow and laid all the land out in one or one-half acre squares, and then took a Fresno scraper and built good high levees, on my plow lines. After this was done I plowed the whole 40-acre tract, and then proceeded to irrigate this tract. I would cover each check all the way from eight inches to one foot deep with water, and proceed likewise with the rest until finished and then let the water soak away without draining the checks. This drove all the alkali down in the ground from the surface.

I then waited until the ground was dry enough to get on with my teams and a disc harrow and pulverized the surface two or three inches deep, then used a Gorham seeder and sowed 18 pounds alfalfa seed to the acre. In using the Gorham seeder all the shoes and plows must be taken off and sowed broadcast. The reason I used a Gorham seeder was because I got an even spread of seed.

I then made a brush of green willows 10 feet long, and nailed these on a 2x4 or 2x6 head piece 16 feet long and brushed my seed in. The principle was not to cover the seed too deep. The moisture in the ground brought all my seed up. After it was up five or six days I irrigated again, but only enough to cover the ground two or three inches deep, and I allowed this to stand as I did before. Great care should be taken on hot days as the sun will scorch or scald the young plants. It is better to irrigate after sundown. After the second irrigation I ran deep ditches so I could drain all my checks dry of water after filling. I now have the finest stand of alfalfa a person could wish for, by simply driving the alkali down and out of the way for production.—F. C. B., Lovelock, Nevada.

[We are glad to have this further demonstration of our claim that alkali can be driven down by plowing and irrigation if the soil was free for the movement of water. Driving down and washing out is about the only practical scheme with alkali.—EDITOR.]

BRIDGE-GRAFTING GIRDLED TREES.

To the Editor: I have a young prune orchard five years old, and I find the trees are being girdled from six to ten inches, beginning at the top of the ground and working down toward the roots. I have been unable to find what is doing the work, but think it must be either gophers or field mice. I have always been successful in trapping gophers, but so far have been unable to catch these. Is there anything I can do to save the

girdled trees?—O. A. M., Calistoga.

[We cannot tell you what to do to prevent the pest until you find out what is doing the work. You could remove the earth down to the main roots and soak the bark with commercial aloes (one pound to four gallons of water). That would make the bark too bitter for any rodent to eat, but it would take lots of time and some money. You can save girdled trees by "bridge grafting"—springing long scions from healthy bark below to the same above the injury. Put in several around the trunk.—EDITOR.]

CHILE SALTPETRE.

To the Editor: I wish to learn all that I can about the use of saltpetre as a fertilizer of crops. I have seen it stated that it has been used with great benefit on garden crops.—G. S. K., Auberry.

[It is Chile saltpetre of sodium nitrate which is used as a stimulating nitrogenous fertilizer. When the term saltpetre is used in connection with preservation of meats, etc., it means potassium nitrate which is too expensive for use in fertilizers. Chile saltpetre is largely used in the way you mention and it can be bought from all fertilizer dealers. Great care must be taken, however, not to use too much and not to apply it in quantity near to the plants. The usual dose is 200 lbs. per acre well distributed. That is perfectly safe and considerably more may be sometimes used to advantage but increasing the dose should be carefully done after some experience has been gained in the use of it.—EDITOR.]

WINTER SPRAYING IN SONOMA.

The advantages of early spraying in the dormant period have been emphasized this year by the heavy rains that have kept fruit men off the ground, which will cause a big rush of work in the spring. The extent that spraying is being done is indicated in the fact that in Sonoma county this year there are 10 or 12 carloads of spray materials that have been purchased, which is the estimate of County Horticultural Commissioner Galloway, each of these carloads being sufficient to make 10 or 12 carloads of stock solution. A close watch has been kept this winter on the Rosy or Purple Apple aphid by Deputy Commissioner O. E. Bremner, who found that the egg laying began very late—about December 20. Spraying at the time of egg laying apparently promises the best results for the control of this pest.

FREE CORN AWAKENS THE ARGENTINE.

Nearly 300,000 bushels of Argentine corn were being unloaded at New York one day last week and millions more from the South American republic are under contract. The importations are the direct result of the removal of the duty on the staple under the recent tariff act. More than 1,000,000 bushels have been received in the United States since the tariff went into effect, the first from the Argentine ever brought here, and already the competition with the American corn has forced a decline in cash values.

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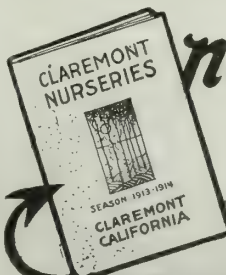
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Ask for 1914 Catalogue.

Cost of Pumping for Alfalfa.

To the Editor: Is it possible to pump water 100 feet for alfalfa and make a good profit, when alfalfa will sell for \$10 per ton or upward? The land in question is in Arizona and the

water is in abundant supply. From one well a flow of from 1000 to 1500 gallons per minute can be secured.—W. E. L., Covelo.

ANSWER BY HOLTER & RODGERS.

Regarding the question of your correspondent would say it is possible to lift water 100 feet in alfalfa production, where alfalfa will sell for \$10 per ton or up.

With the cheap fuel engines now on the market the fuel cost is comparatively low. I have in mind a crude oil engine that is said to burn oil of as low as 24 degrees gravity. Take for example we wish to pump 1200 gallons per minute. This will require a No. 7 pump. To raise this amount of water a distance of 100 feet a 75 horse-power crude oil engine will be needed, as I understand the vicinity is supplied with this type of fuel. This engine consumes, say, from 9 to 10 gallons of fuel per hour at from 2 to 3 cents a gallon. Take the higher figure which is very high, and the fuel cost will be 30 cents an hour of \$3.60 for a 12-hour run. The amount of water pumped in this number of hours will cover $3\frac{1}{2}$ acres 6 inches deep. Practically a cost of \$1 for each 6-inch irrigation or \$5 an acre for a 30-inch irrigation for the season. Cost of attendance will amount to another \$1 for each 6-inch irrigation or \$5 per acre per season. Thus the total irrigation cost will amount to about \$10 an acre per season. One should expect at least 5 tons to the acre of alfalfa per season which will give a gross return of \$50. Deducting \$10, for irrigation costs, \$40 remains to be divided between field attendance, harvesting costs and profit. This estimate allows for a maximum cost for irrigation and minimum return.

The 75 horse-power crude oil engine costs about \$3500 and the No. 7 pump may be obtained for about \$400.

Probably a simpler and cheaper way would be to build a reservoir at the highest point to be irrigated. A smaller type of crude oil engine and smaller pump, which can be run continually may then be used. Thus, 24 hours pumping will afford 12 hours irrigation at a nominal cost for fuel, fixed charges and attendance. The smaller plant will give a proportionately higher cost for fuel consumption but the cost of attendance can be greatly reduced.

The area to be irrigated and the amount of water to be applied through the season will control the economy of raising water 100 feet for alfalfa production. The amount of water to be pumped, or the height it is to be lifted, is simply a question of power, and, in this case cheap power. Alfalfa should have at least 30-acre inches of water per season. To put a depth of 2 feet of water on one acre, it takes a flow of 450 U. S. gallons per minute for 24 hours, irrespective of losses by seepage which is very important. Knowing the acreage, one can figure the number of days required to cover a field to a given depth. From this the cost per acre may be figured.

San Francisco.

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Plant Citrus Trees for Profit



Our stock is grown under ideal soil and climatic conditions—strong and thrifty—free from scale, and will grow true to name. We have also a full line of Deciduous and Ornamental Trees, Plants, Vines, etc. We can supply on short notice your requirements for nursery stock of almost every kind.

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There is a big demand for olives, but we have as yet a fine stock to meet the demand with. We suggest, however, that you get in touch with us immediately. We pack and ship in perfect order and guarantee safe delivery.

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Roses and Shrubbery
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California CITRUS AND DECIDUOUS Fruits

are favorably known everywhere. Fruit orchards in California pay splendid returns on the investment. If you have a large or small tract of land, plant it to fruit trees. A good orchard is better than life insurance; it pays the assured during his life time and continues to pay yearly dividends afterwards. You can't leave your family anything better than a good bearing orchard.

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Good trees are a good investment. Poor trees are dear at any price. Fancher Creek trees are the result of thirty years experience. Are grown in the choicest sections of California, are hardy, well rooted, free from scale and will be shipped in such condition that they will arrive at your place in first-class shape.

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It lists and prices over 2000 varieties of trees, plants, vines, shrubs, etc. Is handsomely illustrated and a copy will be sent free on request to any address. Write for it today.

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Our 1914 Catalog mailed free to any address. It will tell you how and when to plant. Alfalfa seed, Free of Dodder, is one of our specialties. Samples and prices submitted upon request.

Mangel Wurzel and Sugar Beet seed of improved types listed and fully illustrated in our Catalog.

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SEEDS

There is promise of a large turpentine industry in the west and southwest, the raw product being supplied by the resinous gum of western yellow pine.

It has been demonstrated that overgrazed stock ranges on the national forests can be brought back to use under a system of regulated grazing faster than if they are left unused.

Way of Farm Wastes.

The way of the transgressor is hard, but thrice harder is the way of the waster, writes William Johnson in Farm and Fireside. Adversity reaches with a hundred hands of frost, heat, blight, disease, and insect life for the farmer's wage. Waste crosses the palm of every such hand with gold that toil has won but which methods have lost.

And the waster seems not to know the nature of his affliction. Unknowingly he has made gods of mismanagement, prejudice and neglect. To these his strawstacks are burnt offerings, and a tithe of all he raises or should raise, is given.

He selects his seed corn from the crib and prepares a shallow seed bed consisting of lumps, air spaces, hardpan and weeds. Or he sows grain on land which is pleading for alfalfa or clover. The season is half wasted because the crop is a half failure.

The waster puts a breedless cow in a sunless barn and gives her a milkless ration, and his soul is much disturbed because there is no profit in the arrangement.

He gathers unto himself a flock of scrub hens and uses them as a medium through which to feed a hundred dollars' worth of grain to mites, lice and weasels.

He keeps his hogs in pens, and the hog cholera germ waxes vigorous in the mud. He looks on vaccination as a flimflam and the land which should be growing alfalfa pasture is pasturing the corn-root louse instead. On the waster's farm grain is not treated for smut, nor is the quality of seed ever questioned by test. Cheap grass seed is sown, and an annual increase of weeds lift up their bright blossoms in a psalm of thanksgiving to waste.

Waste is an unwritten mortgage, but legal form and notary could not make its interest surer. Could we see in actual cash the toll it exacts, our souls would rise in revolt. It takes the grain before it gets to the bin, the

milk before it gets to the pail, the hog before it gets to market. Waste works in continuous ways its robbery to perform, but it travels one broad road—mismanagement.

And the remedy is watchfulness.

GET TO GRAVEL OR PUT IN TILE.

To the Editor: I have some puzzling irrigation problems, part of my ranch being inclined. I have also a large depression where I lose about 100 vines and when we irrigate the water gets into this hole and makes a lake for several days. I have noticed in another place where there was a squirrel hole near a fig tree and that water run into this hole for several days with no sign of filling it up. Now if in some way I could put a large squirrel hole in the low spot and keep it open would it not take care of the water? I put a hole down in this place last March, we struck mud at 12 feet. Later the water came up about eight feet more and remained at that level for a long time. Can you suggest anything?—W. J. P., Sanger.

[Frequently it is possible to drain low places entirely surrounded by higher ground by digging a hole such as you suggest, and such as the squirrel hole evidently is. The proposition is simply to go down until you reach sand or gravel through which the water can flow easily. The water from the swale will sink into such a hole and run off. Many large swales have been reclaimed in this way, but in order for the plan to be successful the strata of loose material has to be reached, and sometimes it cannot be found near enough to the surface to make the work profitable. In your case if such gravel strata occurs it evidently is below the bed of mud and probably separated from it by hardpan. The only other way to drain will be by putting in tile drains to take water to lower ground. If you put in tile to draw the water down to three and one-half feet below the surface, you need not worry about the water below that. —EDITOR.]

POTATO POLICIES AND PRODUCTS.

The recent order of Secretary Houston of the Department of Agriculture, prohibiting the importation of potatoes because of certain foreign potato diseases, makes timely statistics just prepared by the Bureau of Foreign and Domestic Commerce showing the import and exports of this food product for a long term of years. Since 1900 there have been imported practically 37,000,000 bushels against 16,000,000 bushels exported. The high importation was in the fiscal year, 1912, when 13,700,000 bushels came in, following a short crop here in the calendar year, 1911. Of these 12,500,000 bushels came from Scotland, Ireland and England.

The average import price has ranged from 41 cents in 1902 to \$1.09 in 1907, while in 1912 the year of the big importation, it was 52 cents. While most of the importations have come from the United Kingdom, its production is less than that of this country, having been 281,000,000 bushels in 1911 against 293,000,000 in this country.

"A Stitch in Time Saves Nine"

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

If you will write to us for the booklet "Feed the Soil that Feeds You" it will be promptly mailed, free. It explains that fertilizing is an investment, not an expense.

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grown without shade, as are ours this season, are vastly superior to those grown under shade.

They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencias, Lemons and M. S. Grapefruit. Order now.

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HALF MILLION SEED BED STOCK FLORIDA SOUR ORANGES AND GRAPE FRUIT

Strong, thrifty one-year-old stock, eight inches and up.

Also fine line pedigreed stock of Eureka Lemon, Navels, Valencias, Marsh Seedless Grape Fruit and Mission Olives.

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ARE MAKING GOOD, SO REPORTS SAY, FROM FAR AND NEAR.

If you are interested in new and better strawberries, unlike anything you have had before, write to Etter and get his booklet on strawberries he has originated and strong testimonials corroborating his statements.

These new hybrid plants are three to five times more vigorous than ordinary sorts and succeed where ordinary sorts fail. The greatest canning berries the world has ever produced and the table quality unsurpassed. Bred largely from our native species, making typical California plants to meet California conditions of soil and climate. Many plants ready December 1st.

ALBERT F. ETTER, Briceland, Cal.

GROWN OUT DOORS

Constructive Agriculture—No. 3.

Internal Waterways for California.

[Written for the PACIFIC RURAL PRESS.]

The Internal Waterways Congress spent a half-week of hard work in San Francisco, from January 15 to 17, in setting into motion one of the greatest projects planned for California for a long time: the building of a system of internal waterways. This is a thing apparently designed to benefit commerce; actually its greatest benefit will be to agriculture. The following is just a résumé of the whole situation, as it affects irrigation, reclamation (or flood control), navigation, and power. All of these objects will be vastly promoted by the success of the work undertaken, and the importance is apparently in the order named, actually and in the sentiment expressed.

The thought of the congress resulted from the increased commerce expected to develop from the opening of the Panama canal. The congress was called by the Commonwealth Club, an organization composed of leading men and women of California and devoted to considering and promoting objects of public welfare. This congress formed a permanent organization with the special object of getting internal waterways built in interior California. It will try to have all work planned and done as a great harmonious whole in the best way possible.

HARMONY, NOT CONFLICT.—The promotion of the waterways is not in conflict with the interests of irrigation and reclamation; rather it is in harmony with them, also secondary. From the very start, the irrigation sympathizers were seen to be in the big majority and had everything their own way, though everybody thoroughly approved and supported the final policy adopted. This policy is named, To promote the interests of internal waterways of California, giving special care to the interests of irrigation and reclamation.

Just how the interests of these three things (and power) coincide is quickly seen. The first essential of all four things is the building of great storage reservoirs in the mountains. These would keep back floods, thus protecting reclaimed lands, preventing breaks in levees, and so on. At these dams, whatever was done with the water, would be generated vast amounts of electric power. They would be either storage or diverting dams for irrigation. If not used for irrigation, the water could be let out by degrees during the low stages of the rivers to provide more water for navigation. If used for irrigation, it would also by seepage give a much greater flow of water in the low stages than if not a drop were diverted or stored, and so help shipping. For example, as one delegate stated, there is more water in the lower Tuolumne when every drop at the dam is taken for the Modesto and Turlock districts than there was in midsummer years ago when all the water ran to waste. Thus the essential harmony between internal waterways and irrigation and reclamation is seen when the essential point of all is taken, the building of storage dams in the mountains. Thus the organization of a permanent Internal Waterways Congress is one of the best things possible for irrigation in California, especially since the

congress will consider irrigation of paramount importance, though attempting particularly to aid waterways.

NAVIGATION POSSIBILITIES.—Since this is an Internal Waterways Congress, the effect on California agriculture by internal waterways should be clearly understood. These would in the first place provide the cheapest kind of transportation, the freight rates being only a fraction of those charged by railroads.

They would also affect districts not reached by them. For instance, if a canal reached Fresno, not only would Fresno get cheap transportation, but rates to all places from which freight was shipped through Fresno would go down as well. Low rates would affect agriculture primarily, as the rivers or canals would be used mainly for transporting farm produce, and saving in freight is like getting more money for goods.

California is highly favored in internal waterways possibilities in most ways and at a disadvantage in others. Hardly anywhere are the valleys so level over long distances as in interior California, giving slow movement of water and inexpensive construction. The extremes of our great central valley are very little above tidewater.

In practically all other temperate climates navigation is stopped by ice in winter, giving the railroads a big advantage in competition. Here canals and rivers are and would be open at all seasons.

A disadvantage is that elsewhere summer rains give a fairly good supply of water at all times. Here a long dry season makes the rivers low when there is the most freight to carry and when irrigation is needed the most. That is the main reason why storage dams would be needed if navigation through the interior is to be developed.

There is, however, this alternative: instead of depending entirely on our rivers to float vessels, thus using vast supplies of water, we could, as they do in Europe, build canals, which use no more water than is lost in seepage, evaporation, and the use of locks. Canals are lifted 600 feet in Europe, are extensive on more level land, and of vast use and value. They will supplement our rivers well.

WHERE THE MONEY COMES.—After the need is seen, the important point is, How can the end be accomplished? The first great agency is the United States Government. The Secretary of War has the decision regarding any work done on navigable streams in the United States. His approval and co-operation are necessary for everything that is to be done. Furthermore, large appropriations are made at various times by Congress for improvement of waterways. Some appropriations are made for political purposes that should not be made, others are not made that should be. There is a continual improvement in policy, so that the best measures are getting the money. The first great thing is to devise a sensible, practicable and necessary system of internal waterways improvement for California, back up the demand by strong popular approval, and the knowledge that the work is required, demanded, and that

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You must use more efficient tools

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Offset the reductions in tariff by making your acreage yield more. Even a 10 per cent increase will make a big difference in your profits—and that is easily possible by careful planting. One of the best helps is

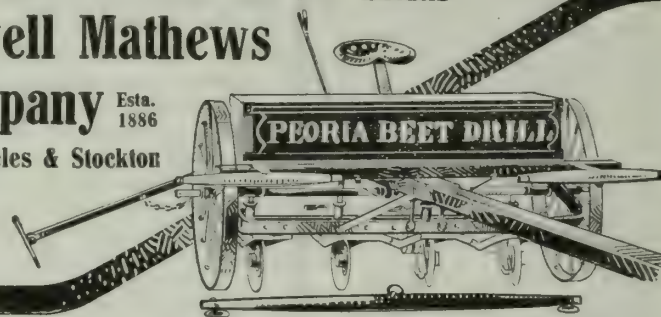
The Peoria Beet Drill

Steady running. Two wheel drive. The force feed is fluted, made right size to sow exact quantity of seed—without cracking it. Easily adjusted. Needs no blacksmith.

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THE EARLIEST HEAVY BEARER.—The original tree now 12 years old, has borne 10 successive crops. Trees now 6 years old have borne 6 crops of nuts (7 years from grafting).

Large, Blight-Resistant, and Finest Quality. Stock of trees limited. Write for prices.

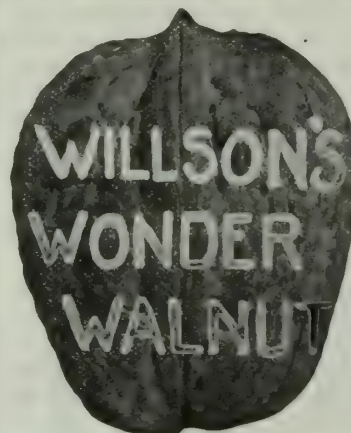
ALSO GENUINE FRANQUETTE WALNUTS. All stock grafted on California Black.

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Do you raise early or late potatoes?

There's a difference between early and late varieties that should be considered in fertilizing. For the early kind use 1,000 pounds per acre of a fertilizer containing 10%

POTASH

5% ammonia and 8% phosphoric acid. Under average conditions, 800 pounds of 3-6-8 is the most profitable for late crops.

Some growers double these amounts, for they are convinced that Potash Pays.

Caution: Be sure your Potash for potatoes on heavy soil is in the form of Sulfate.

Write for Potash prices and for Free books with formulas and directions. We sell any amount of Potash from a 200-pound bag up.

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ESTABLISHED 1884.

Offers the following varieties in strictly No. 1 Trees: 25,000 Bartlett Pear, 10,000 Apple (leading varieties), Autumn and Winter Pear, also Plum, Prune, Peach, Apricot and Almond Trees, Grape Vines, Ornamentals, etc. Price List on application.

THOS. S. DUANE, Prop.

Martinez, Cal.

no money will be wasted, will bring the national appropriations quicker by far than they otherwise would come. Heretofore there has been too much asking for money for special purposes without sufficient reference to related matters, so taking the subject in one great, complete, harmonious plan is a great improvement.

In the second place, there is the State to fall back upon. The federal government appropriates money often only when local appropriations accompany them, which has been the case with most projects in California. The State, by bonds or otherwise, must put up as much money as the United States, so each will get double the value for the money provided.

Thirdly, there are local appropriations to be secured, say by the formation of irrigation and reclamation districts. Irrigation districts find it profitable to build storage dams in the mountains unaided for the water with which to irrigate in summer. They would find it much cheaper for such great dams to be built in co-operation with State and Nation to prevent floods and provide summer flow by seepage, using those dams as storage reservoirs. The interesting feature here is that the United States Government, as a rule, would not spend a cent on those dams as an aid to irrigation alone, but it can do so with good grace if navigation is the excuse.

As the fourth source of supply, there remain the reclamation districts, the lands endangered by overflow. Instead of spending immense sums in building high levees and still being in danger of submergence, they could build more moderate-sized levees if systematic flood control by storage dams were built in the mountains. The latter would be an absolute and easily operated control of severe floods.

And from these great storage dams would be developed the electric power that almost alone would be sufficient reason for building them. We get four great advantages: cheap navigation, abundant irrigation, protection of rich bottom lands from floods, and development of electric power. If necessary, we can add a fifth advantage: the sale of water for municipal purposes to California cities. Although the congress is to develop internal waterways, the above are the actual results to follow.

ORGANIZATION AND OFFICERS.—There is now a permanent congress to work for these ends. It is and will be composed of all organizations and individuals interested in the waterways improvement, and will meet twice a year, the second Thursday of January of each year in San Francisco, and the second Thursday in September at whatever place seems best.

There are as officers: William R. Wheeler, traffic manager of the San Francisco Chamber of Commerce, president; Chester Rowell, of Fresno, first vice-president; Mrs. E. G. Green, of Palo Alto, president of the State Federation of Women's Clubs, second vice-president; J. L. Craig, of Stockton, treasurer; David L. Walker, of San Francisco, executive secretary.

As an executive committee, there are the following men, chosen to represent all interests and all sections: Dr. George C. Pardee, of Oakland; Captain A. E. Anderson and Captain H. J. Corcoran, of San Francisco; I. L. Borden, San Joaquin county; W. G. Alexander, Santa Clara county; R. L.

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"AMERICAN" pipe is made with the "lock seam" or turned joint—contains no rivets, except at collar. A riveted joint has only 70% of the strength of the sheet metal, while a turned joint has 100% or more. This means that "AMERICAN" pipe will last as long as the

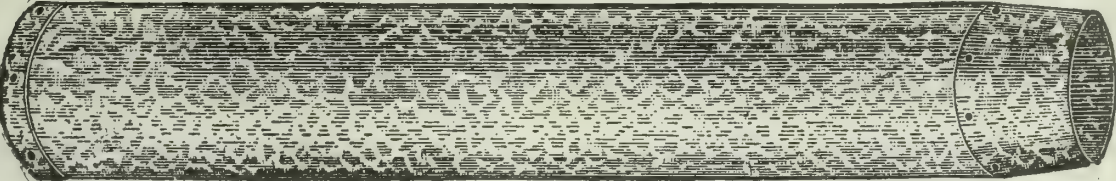
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Surface Irrigation Pipe

sheet steel. It is practically indestructible, and it is impossible to produce leakage in this pipe, as the turned seam is **DOUBLE LOCKED**. It is the pipe you will eventually use. Write for Illustrated Catalog.

We also manufacture steel tanks, wagon tanks, watering troughs, dipping tanks—in fact, anything in sheet metal. We make **RIVETED** pipe for underground use only.

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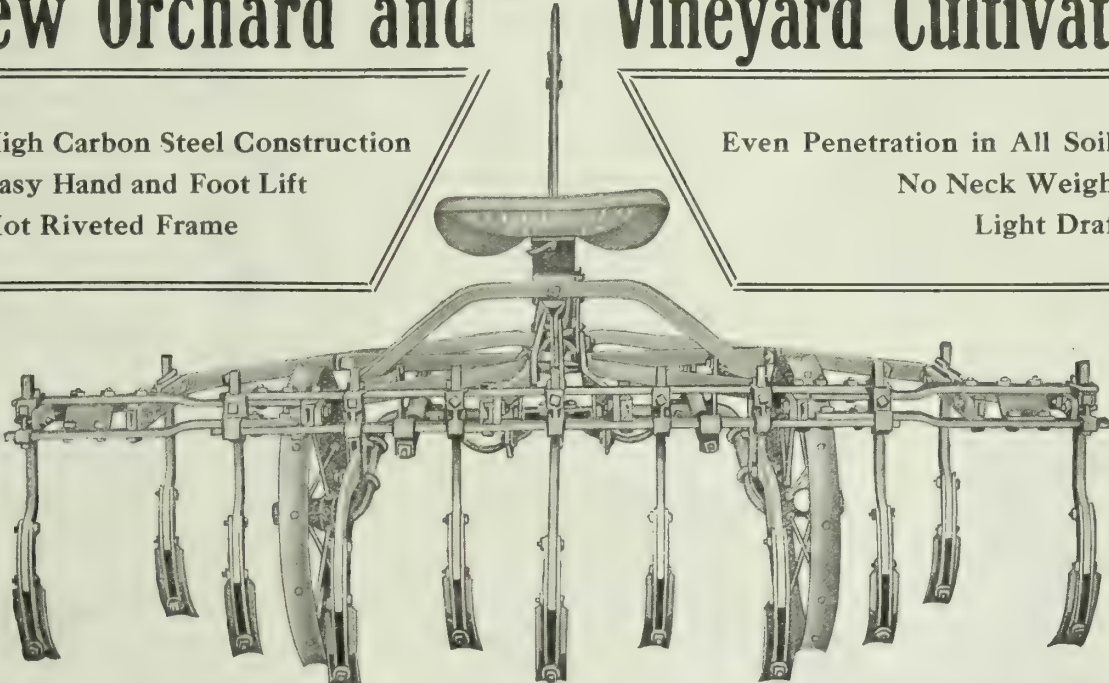


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High Carbon Steel Construction
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Even Penetration in All Soils
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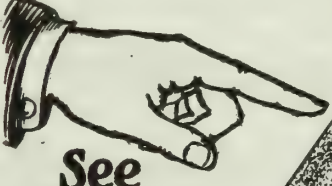
THREE SIZES: 7 Shovels 50-in. Cut; 9 Shovels 64-in. Cut; 11 Shovels 80-in. cut. Post Card will Bring Folder B-2 Nicely Illustrated

JOHN DEERE PLOW COMPANY, San Francisco

Hargrove, Madera county; Frank N. Hill, Fresno county; C. A. Barlow, Kern county; J. L. Beard, Napa county; W. A. Beard, Yuba county; M. E. Dittmar, Shasta county; Marshall de Motte, Tehama county; Frank Johnson, Kings county; William Patterson, Stanislaus county; and Alden Anderson, of Sacramento.

Then as a board of trustees to insure a policy that will be pleasing to all parts of the State, were chosen representatives from each county in California with any interest in the undertaking. Several counties wished more time to choose trustees, but those appointed at the congress follow: Fred W. Schultz, Colusa; H. C. Cutting, Contra Costa; Henry Hawson, Fresno; Frank Freeman, Glenn; W. S. Clark, Humboldt; H. A. Jastro, Kern; Russell Brownness, Lassen; G. W. Mordecai, Madera; Charles W. Byrnes, Marin; Horace G. Kelsey, Merced; C. E. Bonner, Modoc; A. D. Foote, Nevada; Alden Anderson, Sacramento; C. M. Wooster, San Francisco; F. S. Israel, San Joaquin; H. C. Tuchen, San Mateo; Irwin F. Ryder, Santa Clara; A. A. Taylor, Santa Cruz; T. W. H. Shanahan, Shasta; J. W. Dutton, Solano; Burton Smith, Stanislaus; W. F. Luning, Tehama; H. C. Carr, Tulare; W. E. M. Beardslee, Yolo; Captain J. R. Foster, Yuba.

It is rarely that such a fine body of men and women have been gathered together to discuss matters of



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public policy as attended the congress, or more interest and attention given than were shown. This work is to be a great thing for California, espe-

cially California agriculture, and the work is best encouraged by a thorough understanding of the situation and a hearty support by the general public.

AGRICULTURAL REVIEW.

Field Crops and General Farming.

The Indians at the Piute Reservation at Fallon, Nevada, have been quite successful in raising sugar beets and the government has allotted them ten acres each for increased planting, providing also implements required.

Cutworms have been doing considerable damage to grain on adobe land in the Livermore country. Moderately heavy frosts, which check the worms, were welcomed last week.

The grain acreage in the San Joaquin valley is estimated at 20% larger than for five years, and the condition better than for thirty years back, according to some grain men. In the Tulare lake bottoms more than 50,000 acres is said to be in grain, but heavy rains cause the fear that this will be flooded and ruined.

Owing to prices having little relation to the size of California grain crops, it is hoped that the year will be extremely profitable. As far as barley is concerned the opening of the Panama canal will both give cheaper rates to England, for brewing grain, and increase prices by being earlier on the market.

E. E. Bush and J. F. Pryor are preparing to plant 2600 acres to Sonora wheat on Tulare lake lands.

The extremely favorable temperatures in the Imperial valley this year have left the cotton in very fine condition and a large acreage of volunteer cotton is expected next summer. Barley and other field crops are also making very good growth this winter. The wonderful progress of cotton growing in the valley is shown by the fact that there were 12,706 bales ginned from the crop of 1913 to December 31, as compared with 4943 bales ginned prior to December 31, 1912. In line with the "unemployed" agitation, cotton growers have been advertising for help.

The San Joaquin Valley Sugar Company at Visalia has signed up 5200 acres to sugar beets, all but 200 being in Tulare county. There are 225 land holders, most of the contracts being for small acreages.

The San Joaquin valley expects to rival the Sacramento in rice production, 1000 acres being planned for Wasco, Kern county. Previous plantings have been mostly experimental and on small acreages, but extremely successful.

Over 1000 cars of celery have been shipped from Antioch already this season, with 500 cars estimated to follow. The success of the industry will cause greatly increased plantings next year.

The E. Clemens Horst Hop Company has leased 700 acres of hops near Wheatland and 300 acres near Del Paso, north of Sacramento, to J. W. Roddan of Yuba county, who will produce the crop on a percentage basis.

Ed. Powers of Manteca will plant 500 acres to melons next year. He states that the rains promise an excellent melon yield.

The Southern Concessions Company has been incorporated at Hanford to raise peanuts for the California Panama Exposition at San Diego.

Henry Uphoff of San Jose is displaying six cauliflowers, each weighing seven pounds, which are to be processed for the 1915 Exposition.

From a volunteer tomato vine in the yard of F. M. Feighner of Santa Ana the owner has gathered 610 perfect

tomatoes. The vine ran 20 feet up the side of the house and is 18 feet across. It has not been injured by frost.

The Calxico Cotton Gin & Compress Company has completed arrangements for the erection of a re-compressing plant that will have a capacity of 20,000 bales per month. This will mean that all cotton raised in Imperial valley will be sent to Calxico for ginning or re-compressing.

An effort is being made by the citizens of Lodi, San Joaquin county, to get one of the five farm experts which are to be appointed by the University of California to be located at that place.

A meeting of the Rhubarb Growers Association of Alameda county was held at Hayward last week for the purpose of taking steps toward the handling of this year's crop.

Stevinson Bros., who own 15,000 acres of land in the vicinity of Stevinson, Merced county, recently purchased a 70-horsepower C. L. Best caterpillar tractor, which they are running night and day in plowing, seeding and harrowing several hundred acres of grain land. Seeders are fastened behind and in this way a swath 250 inches wide is plowed, seeded and harrowed at one time.

A report from Sacramento says that the Natomas Consolidated is planting 25,000 acres of its land to grain this spring. As much of this land has not been cropped for several years, bumper yield is expected this year.

The Richvale Land Company sold its entire rice crop of last year to the California Rice Milling Company, of Biggs, Butte county, last week.

Irrigation Development.

A meeting was called at Oakdale, January 20, by the board of directors of the Oakdale irrigation district, for the purpose of discussing whether or not the district will issue bonds to the amount of \$300,000 for the purpose of completing the irrigation system.

Work will be started about the first of February for a pumping plant and tank to furnish water for Strathmore, Tulare county.

A company has been organized, in Orange county, called the Yorba Irrigation Company, with a capitalization of \$25,000. It is planned to sink wells for the development of water to be used in irrigating land which has been too high for river irrigation.

The Farmers Union of the Union district, of Santa Clara county, are opposed to the Guadalupe Creek irrigation project, as they do not believe that it would furnish sufficient water in dry years and that the value derived from the project would not warrant the expenditure.

The State Railroad Commission has granted the Palermo Land & Water Company an increase of 20% in its rates to users. The company asked for an increase of 100%.

According to reports, water was turned into the main distributing canal of the South San Joaquin irrigation district, January 20. Water will be turned into the smaller canals as soon as construction work will permit.

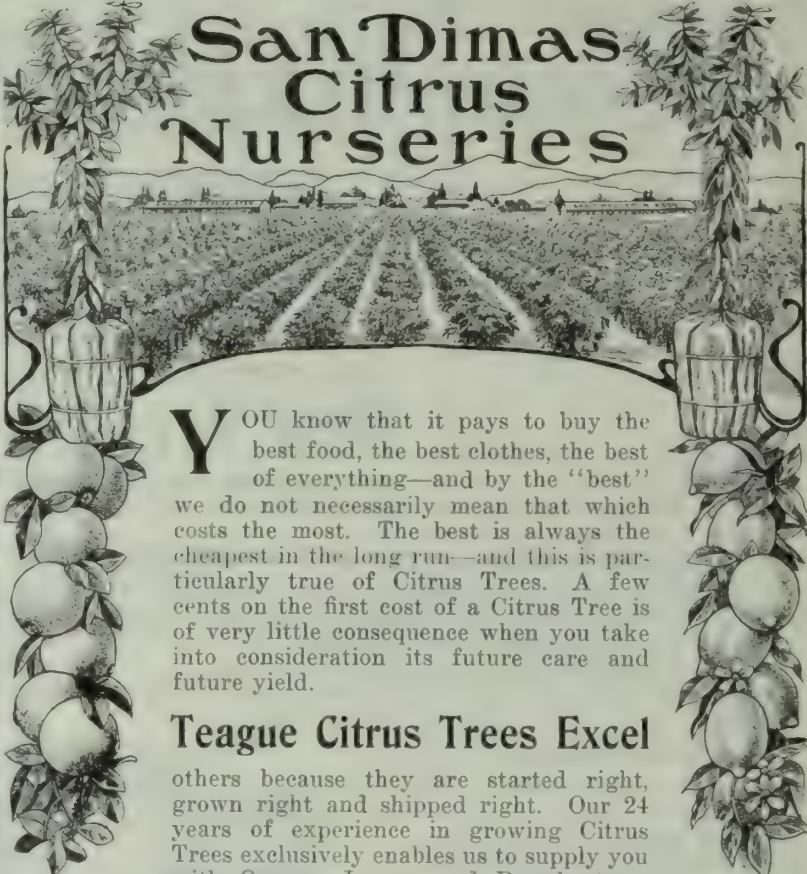
A corporation known as the Greater Humboldt Company has started surveys at work in Nevada for the routing of canals, which it is planned will carry water from the Little Humboldt

river to the Humboldt valley and in this way convert 50,000 arid acres into irrigable land.

Announcement has been made that

the government will reopen the land of the Truckee-Carson reclamation project, in Churchill county, Nevada.

T. E. Milliken, who owns 300 acres



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of rich land north of Stevenson, Merced county, has installed a 10-inch Byron Jackson pump, run with a 30-horsepower electric motor, which will be used to pump water from the San Joaquin river. The entire tract will be leveled and checked for alfalfa at once.

The third petition for the Tracy irrigation district was dismissed by the supervisors of San Joaquin county last week. A new petition entirely independent of the others will be circulated at once.

"Rainmaker" Hatfield, who is operating at Newman this season, is very jubilant over the rainfall, as he seems very sure to win the money offered by ranchers for a heavy rainfall. We understand that he does not claim credit for the rain over all of the State, only for that at Newman.

J. R. Adams of Turlock, who owns 700 acres of land on the banks of the San Joaquin river, has installed a 12-inch direct-connected Byron Jackson pump, run by a 25-horsepower motor. This pump, on a 10-foot lift, will throw 4250 gallons per minute. Mr. Adams is building himself a very nice large bungalow, which will have all the modern improvements.

With the Fruit Men.

A large tract of the Penz ranch, in Butte county, will be planted to olives and alfalfa the coming spring. A dam is to be built to catch and store water for irrigation.

It is estimated that there will be at least 1000 acres of almonds planted near Arbuckle the coming season, one carload of trees having already arrived at that place.

The plant of the Pratt-Lowe Preserving Company, at Modesto, is to be doubled in size for the coming year's run. Due to a lack of fruit, the output for last year was about 50,000 cases, but it is expected that the enlarged plant will do a good deal more than that this year.

County Horticultural Commissioner George A. Lamiman, of Redding, has just submitted his report for last year, in which he says that there was a total of 19767 nursery trees shipped into that county last year. He also says that present indications show that there will be large plantings this year, especially in the Happy Valley district, where much new land will be planted.

W. Kelley Price, of the Selah valley, Washington, has invented a new apple sizing machine which segregates them by weight, instead of by size.

E. E. Warne, of Sonoma, is planting 40 acres of land near Oakdale, Stanislaus county, to walnuts and alfalfa.

The orange shipping season is about finished for the Porterville section this year, the shipments now beginning to drop off considerably.

A prize will be awarded to the California editor who exhibits the finest box of oranges at the coming National Orange Show, to be held in San Bernardino next month. It is stipulated that the box must be grown by the exhibitor.

A published report from Orange county states that there are 27,000 acres of walnut trees in bearing in the counties of Los Angeles, Ventura, Orange and Santa Barbara, and that there are 8545 acres of young orchards which have not yet come into bearing.

According to report, there is some dissatisfaction among dried fruit shippers regarding the inspection and in-

surance of fruit shipped by water to Eastern points. There is some talk of organizing a distinct company from the California Dried Fruit Association, by those who wish to have steamer shipments inspected at the packing house instead of at the dock.

It now seems very probable that the Associated Raisin Company will conduct this year's advertising campaign for the California Raisin Day celebration, which is observed April 30 each year.

A dispatch from Fresno states that at the conference between the trustees of the California Raisin Company and a committee of men representing the dried fruit growers of the county, a resolution was passed favoring the formation of a dried fruit growers' association to be separate from the raisin company.

In a communication to this office, Montgomery Godley of Lincoln, Placer county, writes that at the annual meeting of the Lincoln Fruit Growers' Association the following men were elected to serve as directors for the coming year: F. L. Clark, G. Daniels, J. Fowler, A. Isaak, F. Plinn, J. F. McCarthy and M. Godley.

According to the announcement of the Associated Raisin Company, the total raisin shipments for the year, to date, have been 48,360 tons. The available supply now on hand is 28,500 tons or about 10,000 tons less than was available last year at this time.

Some of the packing house men, in the Porterville section, are planning on signing up individual agreements among the orange growers, which will do away with the picking and shipping of unripe fruit next year. Despite the efforts made this year much green fruit was shipped, which greatly damaged the market.

The Blair-Winchell Company of Grass Valley is planting 400 acres of their land to Bartlett pears this year, which will, when matured, make the largest orchard in that vicinity.

A report from Tulare county states that nurserymen in that county are expecting a heavy planting of citrus and olive trees the coming season.

Leonard J. Phillips, of the Santa Maria country, Santa Barbara county, states that in the northern part of that county, the large cattle ranches will soon be cut up to allow of more fruit planting.

Official figures show that the total production of wine in 78 districts out of a total of 87 districts was 1,278,420,510 gallons, as compared to 1,620,403,280 gallons for the year 1912, in the same districts.

A. J. Call of Fresno is planting his 20-acre ranch to figs. Elberta peach trees are being used as fillers. The fig trees are set every 40 feet. He is also installing a pumping plant and gasoline engine for irrigation purposes.

Poultry Notes.

At a meeting of the Sonoma County Poultry Producers' Federation, held in Petaluma last week, bids from a great many firms were received for the coming year's egg output and taken under advisement. From the number this year of bids it is evident that the market will be better than it has been for the past two years.

The monthly report of the Tulare Co-operative Poultry Association, shows that \$1865 was paid out for eggs last month, with an average price of 46 cents a dozen. The association also handled \$660.50 worth of poultry and \$1754 worth of supplies.

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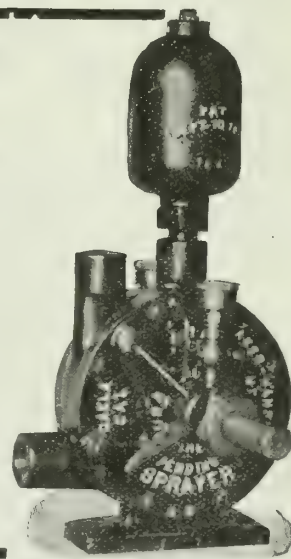
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Why More Mutton Should be Consumed.

[By S. W. McCLEURE, Secretary of National Wool Growers Association, read at the annual meeting of the California Wool Growers Association.]

An examination of the prices of live animals as well as the wholesale prices at which the various kinds of meat are sold clearly indicate that for some reason or other the American people have failed to consume their proper share of mutton and lamb, the most healthful, most nutritious and when intelligently prepared, the most palatable meat derived from any of the larger animals. Market reports of live animals quote fat wethers at 4½ cents per pound, while steers of the same grade are quoted at from 8 to 8½ cents.

Fat lambs are quoted at from 7 to 7½ cents per pound against fat calves at 10 to 11½ cents per pound. This same discrepancy in prices against mutton and lamb and in favor of beef and veal is revealed by the wholesale prices at which these meats are sold in the United States.

If we look abroad we find live sheep of all ages selling as high and in many instances higher than the same grade of beef. In Great Britain sheep and lambs command prices one and one-half times higher than the United States. The low wholesale price of mutton and lamb in this country partly relieves the packer of the charge of purposely bearing the sheep market. We must therefore look to some other source in order to determine the cause of these low prices.

The census of 1910 reports approximately 39,000,000 aged sheep in the United States. Of this number 32,000,000 are reported as ewes. Subtracting 25% from this for yearling ewes that do not breed and 6% for annual losses, we have left 22,256,000 breeding ewes. If we estimate that 77% of these ewes will raise a lamb to marketable age, we find our annual increase in sheep to be approximately 17,000,000 head. Now statistics show that the sheep of the United States are not increasing in number, but are actually decreasing. Therefore making slight allowance for the average decrease, the annual slaughter of sheep and lambs in this country for food purposes must be approximately 17,500,000 head.

The magnitude of this supply will be better understood by a comparison of the annual slaughter of sheep and lambs in the other great sheep breeding nations. Argentina with 80,000,000 aged sheep annually slaughters 6,600,000. New Zealand and Australia with 110,000,000 aged sheep slaughters 9,400,000. These three countries with a total of 190,000,000 aged sheep slaughter annually 1,500,000 less than are slaughtered in the United States with a total supply of but 39,000,000 sheep. Calculating on a basis of sheep of shearing age, we annually slaughter 45% of our sheep against 8% in the Argentine and 8½% in Australia.

It would seem that in these figures may be found the cause for the relatively low price commanded by our sheep and lambs. Great Britain imports enormous quantities of frozen mutton and her supply of fresh mutton and lamb is limited to her own flocks, as her law prohibits the importation of any live sheep unless

they are slaughtered upon specified docks upon arrival. While frozen mutton and lamb compete with her home product, it cannot displace it, or even bring the price of her domestic product to the low level obtaining in this country.

Our annual slaughter of 17,500,000 sheep would not be a sufficient supply for our 90,000,000 people provided these same people had the mutton and lamb eating habit to the same degree as the people of Great Britain. Our annual consumption of mutton and lamb is only 8 or 9 pounds per capita, while in Great Britain it is 26½ pounds. The United States with 90,000,000 people consumes 17,500,000 sheep annually. Great Britain with 45,000,000 is annually consuming 21,000,000 sheep of which 12,000,000 are produced at home.

The figures here given must indicate to us as sheep breeders that if we expect an increased price for our sheep and lambs, we will realize it only by educating the American people to the real value of sheep's meat as an article of food. Let us, therefore, see what virtue this meat possesses. In attempting this we are not groping in the dark, for the United States Department of Agriculture, as well as several of our agricultural colleges, have analysed and studied mutton as compared with other meats.

In selecting our diet, the question of maintaining human health is paramount. It is a well established fact that certain animal diseases are transmitted by meat to human beings. Trichinosis in man is only derived from eating pork affected with trichina. Tape worm may likewise be conveyed to human beings by the consumption of beef and pork affected with measles. Tuberculosis, the burden of the race, is also transmitted by infected meat. We might mention several animal diseases that can be conveyed to the human family by the consumption of meat affected with such diseases.

Now it may safely be said that not a single disease that affects our sheep is transmissible to the human family through its meat. Much of our meat is inspected by the U. S. Bureau of Animal Industry and it is interesting to know that the percentage of mutton inspected is greater than the percentage of any other meat inspected. I here submit a short table, showing the condemnations on account of tuberculosis made by the Bureau of Animal Industry for the year ending June 30, 1912:

	No. inspected.	Carcass-Parts of same condemned.
Cattle ..10,000,900	27,390	49,393
Hogs ..26,916,363	31,517	870,361
Sheep ..13,005,502	none	none

The digestibility of a meat is also of much concern to the consumer, for certain foods may contain a high percentage of nutrient material, but this may exist in such a form that it is not digestible. In respect to digestibility

mutton exceeds beef and pork. Mutton broth has long been a standard diet for the sickly for the reason that it is easily digested and assimilated.

One of our greatest dietary authorities has stated that people of sedentary habits find mutton more easily digested than other meats. After

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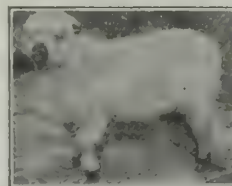


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CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
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INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

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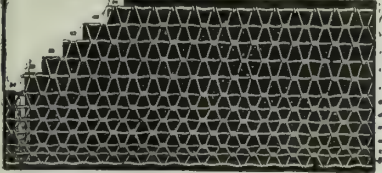
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thorough investigation the food experts of the U. S. Department of Agriculture in Bulletin 526 spoke as follows: "Mutton and lamb are commonly believed to digest readily without causing disturbance, and both experience and the result of scientific investigation seem to bear out this belief. To this may be ascribed the common use of mutton and lamb in invalid dietetics, as well as in the daily fare."

These same food experts carried out digestion experiments by feeding roast mutton to men in normal health. The results show that over 99% of the protein and over 98% of the fat of mutton was digested. This practically means that when we consume mutton, that every valuable element in it is digested. These findings of the food experts agree with the experiences of physicians.

The only excuse for consuming any food is to derive nutriment for the maintenance of the body. In nutriment mutton stands at the top. From the standpoint of the consumer, a meat contains three important constituents, viz.: water, protein, and fat.

The water is waste. The protein and fat constitute the valuable qualities.

After exhaustive experiments the U. S. Department of Agriculture has published in Bulletin 34 the relative value of beef and mutton as a food. We publish the following table showing the composition of the two meats as determined by that Department:

Kind of meat.	Percent water.	Percent protein.	Percent fat.	Fuel value in calories.
Beef chuck	54.0	15.8	12.5	820
Mutton chuck	38.5	11.7	30.0	1485
Beef flank	56.1	18.6	19.9	1185
Mutton flank	39.0	13.8	36.9	1815
Beef loin	52.9	16.4	16.9	1020
Mutton loin	40.4	13.1	31.5	1575
Beef neck	45.3	14.2	9.2	650
Mutton neck	41.5	12.2	19.6	1055
Beef hindquarter	52.0	16.1	15.4	950
Mutton hindquarter	43.4	13.8	23.2	1235
Beef sides	50.5	15.2	15.5	935
Mutton sides	43.3	13.0	24.0	1255
Average for beef	51.8	16.0	14.9	927
Average for mutton	41.3	12.9	27.5	1403

This shows that when beef is bought you pay for 51.8-10% of water which has no value. But in mutton you get but 41.3-10% of water. In protein, beef slightly exceeds mutton, but the advantage is small. In fat mutton far exceeds beef, and fat is one of the most valuable constituents of meat furnishing the body with heat and energy. Finally, the value of any food is summed up in its fuel value to the body. This food value is measured in calories, just as the power of a traction engine is measured in horse power. A calorie is the amount of energy required to raise 1-53/100 tons one foot high. A pound of mutton possesses 1403 calories of fuel energy, while a pound of beef of the cuts above given possess but 927 calories. Here we see the fuel value of mutton fairly compared with the fuel value of beef, and we find mutton has a value approximately 34% higher than beef for the cuts here given, but when we consider the entire carcass, its excess value is almost 50% greater than beef.

Now, lest we be charged with presenting a prejudiced view in favor of mutton, let us quote from official publications of both State and Federal governments. In Bulletin 526 the U. S. Department of Agriculture says: "Judged by its composition, palatability, wholesomeness, digestibility, rela-

tive cost and the number of ways in which it can be prepared for the home table, mutton is an important food-stuff, which is well worth the attention of the housekeeper who wishes to provide her family with an attractive and palatable diet at a reasonable cost."

In Bulletin 77 the Idaho Experiment Station says: "It is also of interest to note that very few sheep have been found to be affected with any infectious disease when slaughtered. Agents of the Bureau of Animal Industry inspected more than 13,000,000 carcasses of sheep in 1911, and found no evidence of tuberculosis in a single carcass. Large numbers of meat consumers have turned to mutton on account of the high cost of beef and pork in recent years and in the change made temporarily for economy, have acquired the 'mutton chop' habit and have been educated to the healthfulness, high nutritive value and relative cheapness of mutton for a part of the human diet."

In Bulletin 45 the University of Minnesota says: "Mutton and lamb should be used to a greater extent by our people for the following reasons: It is as cheap as beef, and the stewing cuts are usually the cheapest meats that can be purchased. Cleanly dressed mutton and lamb is just as palatable as any other class of meat, and many people maintain that it has a better flavor. They furnish a change from the constant use of beef and pork. Sheep have very few contagious dis-

eases and fewer sheep carcasses are condemned in packing plants than any other class of animals. Mutton is not excluded by any large class of people on religious grounds."

Aside from the phase of the question here discussed, mutton from the standpoint of convenience is superior to beef. A cut of mutton, a leg of mutton, or even one-half of a mutton carcass is conveniently handled by the average family, and on account of its greater freedom from moisture and the harder texture of its fat, may be kept for a longer time than either pork or beef.

Above we have outlined some of the advantages of a mutton diet yet we have also shown that the American people little understand these advantages. Therefore, the first move in the campaign to extend the use of mutton is the education of the public. This may be accomplished only through advertising. For more than two years the National Wool Growers Association has been spending a great deal of money to advertise the real value of mutton and lamb. This is of value to the sheep breeder and of value to the consumer. We have succeeded in getting the Secretary of Agriculture to publish Bulletin No. 526 telling of the virtues of and giving many recipes for its cooking. Also the University

of Minnesota has published Bulletin 45 dealing with the same subject. The experimental station of Georgia and the Michigan station have each issued bulletins on the same subject. All of this has been at the request of the National Wool Growers Association. We hope as time goes on to obtain a bulletin on this subject from each agricultural college.

The Association itself has issued nearly 50,000 circulars upon the subject of mutton. Our official paper, the National Wool Grower, has published more literature pertaining to mutton than any paper in America and this has been extensively copied by other papers. While we have already conducted a vigorous campaign our work has only begun, and we call upon each wool grower and each person interested in a domestic supply of clean and healthy meat to assist in this campaign which will ultimately mean that mutton and lamb shall take its true place at the top among meat foods of the American people. The light hid under a bushel will never shine.

A small cannery for locally raised goods is to be established at Fort Bragg.

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Drop a line to Dr. Korinek today and ask for his FREE list of remedies—if you have a sick animal on the place now write at once for FREE advice.

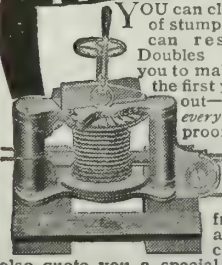
Dr. C. J. Korinek is a graduate of Ontario Veterinary College of the University of Toronto. He has practiced over 12 years, has been Oregon State Veterinarian under two governors and served four years as president of the Oregon State Veterinary Board.

Dr. Korinek is a Veterinarian of National Reputation

The FREE Consultation Department of Dr. Korinek's is doing a great good for farmers all over the Pacific Coast. He answers by personal letter all inquiries regarding sick animals absolutely free of any cost.

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Live Stock Breeders Urge Improvements.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

In addressing the members of the California Live Stock Breeders Association at their annual meeting held last week at the Palace Hotel in San Francisco, President Peter Shields voiced the opinion of all present when he said that the State needed much improvement along live stock lines and that the Association should be the leader in all such improvements.

The points which he considered should be taken up at this time and those demanding more immediate attention were the closer affiliation of breeders with the University of California to enable that institution to become of still more value to stockmen than it has been in the past; to aid in every way possible the making of a bigger and better State Fair, and to lend every assistance possible to the Live Stock Commissioners of the Panama-Pacific Exposition to make the live stock show of 1915 one of the features of the Exposition for all visitors attending.

He said that while there was plenty of work to be done, it required the assistance of every pure-bred breeder in the State, whether large or small, and hoped that in the future the small breeders would lend their support to the Livestock Breeders Association.

He considered one way of accomplishing a great deal of good along stock lines as well as for farming generally, was through the farm adviser and called upon Prof. B. H. Crocheron, of the University of California, who gave a very interesting account of what a farm advisor's duties were and also how those counties having such advisers had profited.

In line with what President Shields said about the University and the stockmen, Prof. Gordon True addressed the meeting in an endeavor to impress them with the fact that the University was anxious and ready to work in connection with the farmer at any and all times and said that instead of the farmers going to the University it was the plan of the University to go to the farmer.

He said further that with the vast increase in population that this State is and has been experiencing the University of California should be in a position to give authoritative information from a practical as well as a theoretical standpoint and urged all farmers to lend their support for that reason.

The assemblage was told the whys and wherefores of the saddle horse by Judge Bridgford who read an interesting paper on that subject.

S. H. Greene of the Creamery Managers Association while addressing the meeting, said that he believed that the price of butter might be expected to lower in price somewhat in the future and that he considered it would be a good thing for the dairy business and especially the pure-bred business if such a thing should happen, as in his opinion it had been so easy to make money at dairying during recent years that scrub stock had been used in most cases where it would be impossible to keep such animals profitably with lower prices for fat.

He said that in his opinion we should be producing more fat of a higher quality and recommended bet-

ter bred sires as one way of bettering conditions.

After listening to the speakers above mentioned, the resolution committee reported. All of the resolutions submitted were favorably passed upon, among them being one for the lowering of the annual dues to five dollars per annum for all members and another urging the voters of the State to vote for the bond issue of \$750,000 for further improvements at the State Fair, which will be brought up at the State election next fall.

After passing the resolutions, the following officers were elected for the coming year: A. W. Morris of Woodland, President; Luis Titus of Oakland, First Vice President; and Wm. Saylor of San Francisco, Second Vice President.

The evening was spent attending the banquet given at the Palace Hotel, where several other interesting speeches were listened to.

The general sense of the meeting seemed to be to make the Association a bigger and better one in all respects for the thousands who will locate here in the next few years will be badly in need of an organization of stock men who have the best interests of the State at heart.

GRAIN OR FOXTAIL FOR CALVES.

To the Editor: In feeding our grade Guernsey calves we are following a formula that is in vogue at the Connecticut Agricultural College, but we realize that this method is arranged for conditions that are quite unlike those found in this part of California and it is upon that phase of the matter that we desire your opinion. According to the Connecticut system, when the calves reach two months of age they are by that time receiving no whole milk at all and are fed instead about 15 pounds of skim milk per day,

two pounds of mixed hay and one pound of grain mixture. The grain mixture consists of equal parts of steel cut oats, corn meal, bran and oil cake meal. As I understand it, there is no pasture at all at this time of the calf's life. After the calf has reached seven months of age it is put on pasture for two months and fed nothing else. After that it goes on a hay and grain ration again.

We have practiced this system on our calves, but at this time of the year there is a lot of foxtail grass to be had and the calves are very fond of it. They have all the pasture they want and seem to be nibbling at the grass all day. The calves are from four weeks to four months old and are doing exceptionally well.

Since they get all of the grass that they want, do you consider it advisa-

No Excuse for any Cow Owner Being Without a

DE LAVAL

CREAM SEPARATOR

THERE is no reason why any cow owner who sells cream or makes butter should be without a separator and there can be no excuse for his not having the BEST separator.

ANY creameryman or experienced dairyman will tell you that a good cream separator will give you a great deal more and a great deal better cream or butter than you can produce with any gravity setting system.



THE DE LAVAL is acknowledged by creamerymen and the best posted dairymen the world over to be the "WORLD'S STANDARD" and the one and only separator that always accomplishes the best results possible and always gives satisfaction.

YOU cannot make the excuse that you can't afford to buy a De Laval, because it not only will save its cost over any gravity setting in six months and any other separator in a year but is sold either for cash or on such liberal terms that it will actually pay for itself.

WHY not start 1914 right in dairying? SEE and TRY a DE LAVAL NOW when you have plenty of time to investigate thoroughly. The nearest DE LAVAL agent will be glad to set up a machine for you and give you a free trial.

DE LAVAL DAIRY SUPPLY COMPANY

165 Broadway
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800—HOLSTEINS—800

Dispersion Sale

Without reserve, the well known Jersey Farm herd of 800 highly bred Holstein cows is offered for sale.

This herd has been bred to the best registered Holstein bulls for 17 years and the cows are practically purebred, but not registered.

Mostly young stock and all heavy milkers.

Springers are available now, fresh cows later. Prospective buyers will be met at the depot by appointment.

Railroad and post office address

Jersey Farm Dairy

San Bruno, San Mateo County, Cal.

TELEPHONE, South San Francisco, Main 92.

Address Superintendent.

ble to give each calf a pound of the grain ration I have described each day? Besides the green foxtail the calves get all the bright alfalfa hay they want in addition to their skim milk.—E. B. D., Ceres.

[With the conditions that you have we believe it would be better to cut out the corn meal and other fattening foods as it is not the object in feeding dairy calves to maké them fat, but on the contrary, to use feeds that will promote a rapid growth and develop them into big framed animals. It is not customary to feed any grain to dairy cows in this State until three or four months after they have been bred, when a small amount of grain may be satisfactorily used. W. J. Hackett, who has a pure-bred herd of Jerseys in your vicinity, feeds six or seven pounds of skim milk twice a day in connection with alfalfa hay, but during the winter months he almost entirely eliminates the hay and substitutes foxtail pasture such as you have, until about the first of March. The oats are undoubtedly good for the growing calves and it is likely that you will be amply repaid for their extra expense, but we should leave the other grains out of the ration.—EDITOR.]

Stanislaus Grade Gives 90.6 Pounds of Fat.

When a grade Holstein cow in the Stanislaus Cow Testing Association gave 84.6 pounds of fat during the month of November, it was thought that a great achievement had been accomplished by the owner in breeding, but from the following report of the Association for the month of December we find that a grade Jersey has done even better, as a cow belonging to J. A. Henry gave during that month 90.6 pounds of fat.

Some may wonder whether the grade cow shouldn't receive more consideration at the hands of the dairyman, inasmuch as such records are not common even among pure-bred cows, but while we do not know the individual cow that has made the above record, we do know that Mr. Henry is a firm believer in the pure-bred sire and has very likely been able to raise this kind of a cow through the use of a good sire.

One noticeable thing in all cow testing associations, is that those having the highest producing cows are men who are firm believers in the pure-bred sire and this has been especially true in the Stanislaus Association. The following is a list of cows that produced over 45 pounds of fat during the month:

Owner.	Breed.	Milk.	Test.	Fat.
J. A. Henry	Jersey	1374	6.6	90.6
Chas. Morse	Holstein	1674	5.2	87.0
Chas. Wilder	Jersey	999	7.7	76.8
Chas. Morse	Holstein	1851	3.5	64.8
C. J. Roberts	Jersey	1170	5.1	59.7
Edwards & Tibetts	Holstein	1707	3.5	59.7
W. J. Bowen	Jersey	1023	5.8	59.4
H. Jacobson	Durham	1188	4.8	57.0
H. E. Cornwall	Holstein	1659	3.4	56.4
W. E. Tong	Durham	1305	4.3	56.1
Blake Vent	Jersey	807	6.6	53.1
N. C. Lollick	Jersey	1017	5.2	52.8
Chas. Morse	Holstein	1431	3.7	52.8
C. H. Rhode & Son	Holstein	1284	4.1	52.5
Chas. Morse	Holstein	1407	3.7	51.9
Chas. Morse	Holstein	1527	3.4	51.9
W. E. Tong	Durham	1149	4.5	51.6
Chas. Morse	Holstein	1335	3.8	50.7
Blake Vent	Jersey	804	6.3	50.4
Edwards & Fibeth	Durham	1401	3.6	50.4
J. A. Henry	Jersey	795	6.2	49.2
Blake Vent	Jersey	906	5.4	48.9
Edwards & Tibetts	Durham	1068	4.6	48.9
Edwards & Tibetts	Jersey	906	5.3	48.3
Rancho Dos Rios	Jersey	819	5.8	47.4
H. Rohde & Son	Holstein	1356	3.5	47.4
H. Jackson	Holstein	1083	4.3	46.5
Edwards & Tibetts	½ Jer. ½ Hol.	1083	4.3	46.5
J. A. Henry	Jersey	930	4.9	45.6
Ira Heffelman	Jersey	930	4.9	45.6
Allie & Josie Ladd	Durham	870	5.2	45.3
H. E. Cornwell	Holstein	1428	3.2	45.3
J. A. Henry	Jersey	714	6.2	45.0

ALFALFA.

[From the University of Minnesota, Altered for California Conditions.]

"What makes the landscape look so fair;

What blossoms bright perfume the air;

What plant repays the farmer's toil, And will enrich the fertile soil?

Alfalfa!

"What is the crop that always pays, Which may be cut each thirty days, Resisting drought, the frost, and heat;

Whose roots reach down full forty feet?

Alfalfa!

"What grows in loam, and clay, and sand;

What lifts the mortgage off the land;

What crop is cut six times a year, And of never a failure do you hear?

Alfalfa!

"What makes the swine so healthy feel, And never raise a hungry squeal;

The wholesome food that never fails To put three curls into their tails?

Alfalfa!

"What makes all other stock look nice, And brings the highest market price;

What fills the milk pails, feeds the calf, And makes the old cow almost laugh?

Alfalfa

Read This Letter

Ambrosia Cream Co.,
Napa, Cal., Nov. 14, 1913.

De Laval Dairy Supply Co.,
San Francisco, Cal.

Gentlemen:

The silo that I purchased from you this year has proven to be very satisfactory and want to compliment you on the good clear 2 x 6 Redwood staves that you used in the manufacture of the same. There is no question as to the Ideal Green Feed Silo being superior to the re-sawed or home-made silos, as it is absolutely air-tight and is manufactured from first-class material throughout.

In erecting my silo I did not use either a hammer or saw except for the staging. I have been feeding out of the silo for several months now, and have yet to find any spoiled ensilage. No dairyman who expects to get the full results from his cows can afford to be without a silo, and from my experience with different silos, I am convinced that your Ideal Green Feed Silo is far superior to any other kind.

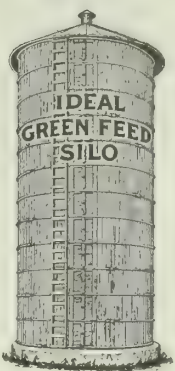
Yours very truly,
H. I. MIDDLETON.

Write for silo catalog B for full information.

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St. 1016 Western Ave.
SAN FRANCISCO SEATTLE

PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.



America's Leading Horse Importers

PERCHERONS

Our recent importation arrived at our Oakland Stables December 13th. At the International Live Stock Exposition, Chicago, December, 1913, our stallions won two Gold Medals; two Championship Ribbons; two Second Prize Ribbons. There were over 600 Percherons at this great show.

If you want the best, let us hear from you.

McLAUGHLIN PERCHERON COMPANY

Kansas City, Mo. Oakland, Cal.



Salvador Stock Farm

Shire Horses

In three years my horses have won over fifty prizes and every championship, at the California State Fair.

My prize winners are for sale for cash and the prices are reasonable.

MARES AND FILLIES ALSO FOR SALE.

HENRY WHEATLEY,
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Cut Ensilage With The Light Running "Papec"

A 4 h. p. engine will run "The Wonderful Papec." It cuts and elevates the ensilage in a full steady stream to the top of the highest silo as fast as you can bring the corn to the machine. The

PAPEC PNEUMATIC ENSILAGE CUTTER

is simple in construction—easy to set up and take down—convenient to operate—gear driven—no lost power. Write today for illustrated catalog—sent free.

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for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,
149 CALIFORNIA STREET, SAN FRANCISCO.

With the Live Stock Men.

A report from the East, states that F. M. Jones, of Utica, N. Y., has purchased the Holstein bull Pontiac Cornucopia, from Colvin Desbane, of Richmond, N. Y. This bull is a son of the cow Pontiac Lass, that was recently sold for a high price and is considered an excellent individual. The bull just sold brought the magnificent price of \$15,000.

A shipment of 600 head of cattle arrived at Gilroy last week from Antioch, Contra Costa county, which will be placed on the Dunne ranch near Gilroy.

George Lowry, of near Clements, San Joaquin county, recently took to his ranch a bunch of Angora goats which were purchased in the northern part of the State.

A report from Porterville states that Gill brothers, of that place, purchased last week from C. H. Bird, of Fresno, 700 head of young Durham feeders.

Hayes and Devaney, of Livermore, expect to ship another trainload of Mexican cattle to their ranges in San Joaquin and Alameda counties during the next month.

The Tulare and associated creameries paid out last week \$74,381.79 for butter-fat received last month. Production for the month held up, but the price was from 1 to 3c per pound lower.

At the National Wool Growers' convention held in Salt Lake City last week, the new tariff placing wool on the free list was held up to much criticism.

It is estimated that the creameries in Kings county paid out a total of \$130,000 for butter-fat received last month. Although the price paid was not so much as that of last month, the betterment of feed conditions is said to have made dairying for the month very profitable.

According to the report of Milk Inspector Robert Greenhalgh, the milk delivered at Hanford, Kings county, during the past month was pure and did not show adulteration or preservatives.

The Central Pacific Land & Lumber Co., of San Francisco, has recently purchased the Morehouse ranch in Glenn county and will turn it into a big cattle ranch in the near future.

C. T. Watson has been appointed manager of the Holtville creamery, at Holtville, Imperial county.

The Government's final attempt to do away with the alleged butter and egg trust was started at Chicago last week. It is claimed that the butter and egg boards at Elgin and Chicago regulate the prices of butter and eggs in all of the Middle Western States.

The Santa Fe railroad has made application to the State Railroad Commission to increase its rates on live stock between Modesto and Oakland, San Francisco and Stockton points.

In his recent report to the stockholders in the Riverdale Co-operative Creamery, J. H. A. Jorgensen, manager of the creamery, stated that the

plant had turned out 511,571 lbs. of butter, and that the highest price paid was 41½c, while the lowest was 31c. Although this creamery has had strong competition, it has made big strides in that district and shows what may be expected from intelligent co-operation among farmers.

In view of the depression of the market the week previous, it was considered remarkable that the market last week at the Portland Union Stock Yards did not break badly. Killers got some good hay-fed steers at prices ranging from \$7 to \$7.40 and cows at \$6 to \$6.50. There was a big run of hogs for the week which brought \$8 to \$8.10, with the bulk of prices at \$8 for smooth stuff. Sheep prices have maintained former levels easily, especially for choice grain-fed varieties, prime wethers selling at \$5.75, ewes at \$4.50, fancy lambs at \$6 to \$6.35, and strictly choice grain-fed lambs at \$6.50 to \$6.75.

W. A. Miller, for a number of years a retail dairyman at Venice, Los Angeles county, has purchased the interest of H. R. Sherman in the Sanitary Milk Co., of Tulare, and will turn over the management to J. H. Drew.

State Dairy Inspector J. S. Canham, of Bakersfield, has just completed a trip through the oil districts adjacent to Maricopa, where he inspected the dairies of that section and states that he found all of them in a sanitary condition.

At the auction sale of dairy cattle held at the Nesbet ranch, near Le-moore, Kings county, recently, the pure-bred Holsteins brought an average of \$184 per head and the grades \$108.65. Among those purchasing was G. A. Smith, formerly of Corcoran.

Articles of incorporation have been filed at Carson City, Nevada, by the Humphrey Reed Land & Cattle Co., which plans to purchase 100,000 acres of land in Nye county and to stock it with thousands of head of horses and cattle.

In letters to this office from breeders in different parts of the State we are told that the demand for all kinds of pure-bred stock is exceptionally good at this time, and many report that they are entirely sold out of all breeding stock.

Milking machine salesmen report that they are having a far bigger demand for the mechanical milkers this season than ever before, and expect a good season. Dairymen have been slow to take hold of the machines, in the past, but the long-standing prejudices have been gradually giving way to the more modern and economical methods.

MILCH GOAT BREEDERS.

To the Editor: Where can I get the best milch strain goat near by, that is Saanen or Toggenburg goat? How much should a one-year old pair cost? It there any association of milch goat breeders in California or the United States?—H. R. I., San Francisco.

[We are mailing you the names and addresses of several milch goat breeders, but you will have to get prices

from them, as these will vary greatly with quality. There is no association of milch goat breeders in California. The American Milch Goat Record Association, J. C. Darst, secretary, Dayton, Ohio, is the national association. —EDITOR.]

RUSSIA EXPERIMENTS WITH AMERICAN HORSES.

The experiment of importing American cart horses for Russia field work has been begun. Consignment of heavy draft horses reached Russia last week for the chief breeders.

The Russian agriculturists find their own type of horse is becoming too light in build, as the breeders have been catering almost entirely to Russian army requirements.

[The foregoing is a cable dispatch from St. Petersburg. Perhaps, we can get at this demand via Vladivostok. —EDITOR.]

Biggs is to have a new rice mill, which will have a capacity of 1000 bags per day.

Live Stock Directory

SWINE.

CHOLERA IS IN THE STATE! Do you want it? For immediate sale, University Immuned prize-winning Hampshires, F. O. B. Martinez, crated and papers. Two-year-old boars, \$35. Three 6-month gilts, \$25. Two 7-month gilts, \$35. One-year-old gilt, \$45. Butcher offers \$35. Address J. W. Henderson, First Nat'l Bank, Berkeley, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND CHINAS—Still have a few extra nice gilts for sale at \$15 each, and one bred sow. N. M. Lester, R. 1, Gridley, Cal.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Heary, Farmington.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH, property of Mr. and Mrs. E. C. Rand—Fine young Berkshire boars for sale, March farrow. Route 3, Box 69, Santa Rosa, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

I NOW HAVE TO OFFER a young bull born Nov. 18, 1913, sired by Acme Pontiac, whose grand sire is King of the Pontiacs, and out of a dam with a butter record of 23,905 lbs. milk 355.1 lbs. in seven days. Price \$300. J. W. Benoit, Route 2, Modesto, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Bal-four, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

FOR SALE—35 head of registered and grade Jersey dairy cattle. Inquire of H. V. Traynham, College City, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 8, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder. Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri Jack, 5 years, 153 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BREEDING JACKS FOR SALE—Prices reasonable. Correspondence solicited. E. R. Elliott, Route 2, Box 57, Modesto, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

Would a Hog Boom Pay?

(Continued From Page 97.)

"A large proportion of the hogs slaughtered by this Company are purchased in Idaho, Colorado, and Utah simply because we can not get them in this State. Right at the present time there is considerable shortage of hogs in California and as a consequence, what few there are bring a good price. It has always been a mystery why more hogs are not raised in this State."

From this it would appear that instead of making any headway in production, we have, during the past year, fallen down to a considerable extent, but as there are no reliable figures as to just how much, there is perhaps, only one way of guessing with any degree of certainty and that is in comparing the present demand for purebred hogs with that of former years, for it is a well established fact that when the demand for breeding stock is good an added production is likely.

Using that as a guide, it seems evident that the coming year will see a large increase in production for older breeders state that they have never experienced a fall season when the State has been so thoroughly cleaned up on good breeding stock. It is just possible, although not probable, (sorry to say) that this is only the effect of the great amount of agitation that has been done in recent years in favor of the better bred animal, but it is very likely that both influences have been at work and that our total production will be materially increased in the next year or two as a result.

Older raisers no doubt know what the market requirements are for the highest prices, but for the benefit of those just entering or contemplating entering the business a brief outline of the kind of hogs that are most sought for by the butcher trade might be advisable.

There is really only one kind of hogs that they do not want, at any price, and that is the one commonly called the "acorn hog." It is claimed that the meat from this animal is so soft that it does not make good block meat, much less cured meat, and all buyers fight shy of it. Grass or purely alfalfa raised hogs, although more desirable, are not held in very high esteem, as they require grain finishing by the buyer, before they can be killed, which means a loss to the owner in price. Skim milk and alfalfa hogs are the next in order, but are still objected to where inspected meats are turned out, due to the fact that a higher average of tuberculosis is found in that class of stock, caused very likely by tubercular cows. Such hogs are bought by inspected plants, subject to test only, and oftentimes cause a loss to the raiser for that reason. The kind that is still better liked than the last named is the one that has had alfalfa, skim milk and some grain, for two reasons: first, because in killing the percentage of waste is not so great, and second, because the quality of meat is much better. As the packer has previously stated, the hog that is spelt with a capital H, is the grain and alfalfa fed hog and for such stuff any buyer is willing to pay the highest market price, a thing that happens too seldom for the good of the State.

In many sections of the East the hog is called the "mortgage lifter,"

and while it is to be hoped that farmers will not be compelled to increase production for that reason in this State, there is no reason that they should longer neglect an added income from hog raising as they have in the past.

ADDITIONAL DAIRY STATISTICS.

In our last issue the butter and cheese output of California for the years ending September 30, 1912 and 1913 were given. Secretary F. W. Andreasen of the State Dairy Bureau has gathered additional data, giving the value of these products, also the amount and value of condensed milk, and gives the value of all kinds of dairy products, by which it is shown that the output of the State amounts to \$34,050,552, an increase of nearly two million dollars for the year. The accompanying table shows this in detail:

ANNUAL VALUE OF DAIRY PRODUCTS.

1912.	
Butter, 54,940,886 lbs.	\$16,905,310
Cheese, 4,785,617 lbs.	739,856
Condensed, evaporated and powdered milk, 9,770,784 lbs.	961,662
Casein, 1,065,000 lbs.	53,250
Market milk and cream....	10,000,000
Calves produced on dairies.	2,000,000
Skim milk and butter milk.	1,500,000
Total	\$32,160,078
1913.	
Butter, 55,542,709 lbs.	\$17,840,318
Cheese, 5,600,972 lbs.	899,516
Condensed, evaporated and powdered milk, 8,637,928 lbs.	777,468
Casein, 665,000 lbs.	33,250
Market milk, cream and ice cream	11,000,000
Calves produced on dairies.	2,000,000
Skim milk and butter milk.	1,500,000
Total	\$34,050,552

The butter receipts in the San Francisco market during 1913, that is, the calendar year, not the year ending September 30, as in the table above, were 23,905,100 pounds, and in 1912 23,548,850 pounds. The cheese receipts were 9,523,700 pounds in 1913, and 11,753,680 pounds in 1912, showing a falling off. The prices for butter were 32.12 cents in 1913, and 30.77 cents in 1912, these figures referring to the years ending September 30. For cheese the prices were 16.06 cents and 15.45 cents in the two years, with the advantages in favor of 1913. Prices for 1911 were still lower.

A CHRISTMAS BOX-CAR.

Thomas W. Lawson's Christmas gift of two carloads of champion pedigreed live stock, which he sent from his Dreamworld farm near Boston to his daughter and son-in-law, Mr. and Mrs. Henry McCall of Prineville, reached its destination.

It is the most remarkable and costliest shipment of pedigreed live stock ever made across the continent, consisting of a herd of Jersey cattle, a herd of Holstein cattle, six breeds of hogs, fifty Rhode Island Red chickens, fifty Plymouth Rock chickens, a cham-

pionship pair of each of three different breeds of dogs, an individual champion bulldog and a lot of high-class pet lambs. Every animal in the lot has taken prizes at Eastern shows.

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4000 TEXAS UMBRELLAS, all grades to twelve feet, straight stemmed and branched.

8000 YEARLING APPLES, 4 to 6 and 6 to 8 feet. Absolutely free from aphid and gilt edge in every particular. Spitzenberg, N. Y. Pippin, Yel. Bellflower, Baldwin, Winesap, Rome Beauty, Wagener, Ben Davis, Red Astrachan, White Astrachan, Gravenstein, Alexander.

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SEED BED STOCK, FLORIDA SOUR AND NATIVE SWEET from a bed covering an acre, cheerfully compared with the extra select anywhere, at very low prices. O. E. VAN SLYKE, 620 Foothill Boulevard, Azusa, Cal. Phone 476.

CITRUS TREES—Washington Navels, 1/2 to 1 1/2 in. 80c; Valencia, 1/2 to 1 1/2 in. 75c; Valencia, 1/2 to 1 1/2 in. 85c; Eureka Lemons, 1/2 to 1 1/2 in. 75c; Eureka Lemons, 1/2 to 1 1/2 in. 85c; Grape Fruit, 1/2 to 1 1/2 in. 80c; Grape Fruit, 1/2 to 1 1/2 in. 90c. Above prices are for Balled Trees f.o.b. Glendora; 5c less packed in moss. Order any kind of tree you like and I will furnish same. Florida Sour and native sweet seed-bed stock. One-third cash must accompany all orders W. O. West, Glendora, Cal.

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Our Franquette nuts bring \$100 more per ton than the best Santa Barbara walnuts. Our selected Royal roots grow 50% faster and sturdier than the average California root. It took US ten years to develop this combination. It is at YOUR immediate disposal. Write for catalogue and prices to Imperial Walnut Nursery, R. F. D. 7, San Jose, Cal. Practically sold out of Franquettes, but have a few choice Eureka left.

WALNUT TREES WITH AN ANCESTRY—Placencia Perfection, Black Root. Scions taken from trees that have had the following requirements for the past four years. Heavy crop, smooth large nuts, rapid growth, symmetry and absolutely free from disease. Some 18 feet high. All this year's growth. Valencia, Navels, sour seed bed stock. Commercial species of Eucalyptus in quantities. Cerro Villa Nursery at Villa Park. Address Hugh T. Thompson, Orange, Cal.

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THE FRANADA NURSERY CO. of Ducor, Cal., will quote you Florida or Cuban sour orange seed delivered to your station or P.O. Hundred thousand sour root orange seedlings, none finer; also citrus trees.

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Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

ORANGE SEEDLINGS, sweet and sour. Grafted walnuts. Budded avocado. Apple, pear, apricot, Trees of all kinds. Orange County Nursery, 4th and Birch, Santa Ana, Cal.

ORNAMENTAL AND FRUIT-BEARING trees and shrubs adapted to the Sacramento valley, at bargain prices. A. Norby, Orland, Cal.

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BARE LAND to 30 acres, near Mountain View. Cash is ready. W. D. WASSON, Mountain View.

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FIRST-CLASS ALFALFA HAY for sale in carload lots. G. D. Zimmerman, Dixon, Cal.

Results of Feeding Cactus.

Few things have been given more attention the last few years in proportion to its use than cactus, especially thornless cactus, and at the same time fewer materials of supposed value as cattle feed have been fed less. This feeding has at last been done in thorough and satisfactory fashion by the U. S. Department of Agriculture in experiments conducted from 1911 to 1913 at Brownsville, Texas. The feeding was done with thorny cactus, not the thornless variety, but owing to the fact that the thorny and thornless varieties would have approximately the same effect, the experiments are only a little less valuable than they would if the latter kind had been used. These experiments on account of the great interest in spineless cactus will prove of great value to a large percentage of farmers.

The Department says the following regarding the results obtained:

Prickly pear was found to be very palatable, and when judiciously fed, was in no way detrimental to the cow or her product during the two years' trial.

The most satisfactory amount was 60 to 100 pounds of the pear per cow per day, depending upon the size of the cow and upon the yield of milk. With this medium ration the cows looked thrifty, and there was no detrimental effect upon the size and vigor of the offspring or upon the cow after parturition. Larger quantities of the pear caused a very laxative condition of the bowels and kept the stable in a more or less insanitary condition.

Chemical analysis showed that the pear was low in protein, high in mineral matter, and contained from 87 to 93% of water. This analysis, and also the feeding trials, indicated that the pear should be used with some dry feed containing a large amount of protein, and that the pear on account of its high mineral content is a good feed to give with a ration deficient in mineral matter, like cottonseed hulls.

When compared with other common roughages in southern Texas the pear was found to have the following relative value for the production of milk fat:

1 lb. sorghum hay, equal to 10.1 lbs. of pear.

1 lb. sorghum silage, equal to 3.3 lbs. of pear.

1 lb. cottonseed hulls, equal to 3.8 lbs. of pear.

The sorghum hay in these experimental rations was about the average quality, while the sorghum silage was below the standard. By substituting 60 to 75 pounds of pear for a portion of the dry roughage the percentage of fat in the milk was decreased forty-two hundredths per cent on an average. It also decreased somewhat the total amount of fat and the percentage of solids not fat, but increased the total yield of milk. Like pasture grass, the pear produced a higher colored butter than did the dry feed. The flavor of the milk and butter was not impaired in any way.

A good daily maintenance ration for grade Jersey cows when dry was found to be 4 to 6 pounds of sorghum hay, 1 pound cottonseed meal, 60 to 100 pounds of pear. [Apparently 10 pounds of alfalfa hay would make the proper combination in California.—Editor.]

Two dry cows were maintained for 50 and 60 days, respectively, on 113

and 105 pounds of pear per day with two pounds of cottonseed meal as a supplement. One cow fed pear alone for 70 days lost 30 pounds in weight. Another cow died from stoppage of the small intestine with balls of fiber, when fed on pear alone.

Cows fed pear appeared to be more sensitive to cold weather than when fed dry feed. This was borne out by the decrease in milk production following "northers." Those receiving a heavy ration of pear decreased in milk flow 7.46%, and those receiving only dry feed 1.91%. Cows fed no roughage except pear, drank no water for days at a time and then only a few swallows; those fed 150 pounds per day drank an average of five pounds daily; those fed 75 pounds, drank 30 pounds daily; those on dry feed drank 69 pounds per day on an average. From these results it appears that pear is a valuable feed when there is a scarcity of stock water.

Working at the usual rate, one man using a gasoline torch could singe one ton of pear in 50 minutes with one and two-thirds gallons of gasoline. After singeing, the pear can be harvested by cutting and hauling to the feed lots, or the cattle can be turned into the field. The latter method is more wasteful of the feed but requires less labor.

Both spiny and spineless varieties were fed in these trials, but no difference could be detected in chemical composition or feeding value for milk production.

The spineless pear can be harvested more cheaply than the spiny because it does not need singeing, but in southern Texas the yield is less.

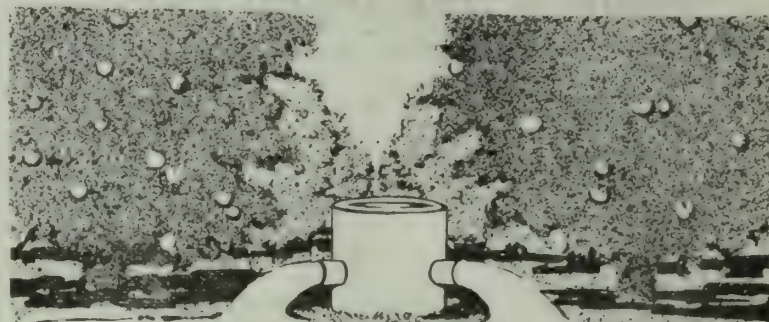
Under farm conditions the cost of establishing a field of pear will be \$6 or \$7 per acre. When once established and properly cared for, the yield of pear will last indefinitely, the young growth springing from the old stumps as soon as the pear is harvested. In southern Texas no irrigation is necessary, but shallow cultivation sufficient to keep out weeds and grass should be given.

The average yield at Brownsville, Texas, under very favorable conditions, two years from planting, was 85 tons per acre per year. The growth from old stumps is considerably greater, amounting in one test to over 200 tons per acre for the two years' growth. These yields were made under good dry-land cultivation. At San Antonio the yield of native spring cactus was 23 tons per acre without irrigation but with fair cultivation. At Chico, the yield of spineless cactus was about 25 tons per acre without irrigation but with expert cultivation.

BUTTER-FAT IN CREAM.

To the Editor: Kindly inform me if the same amount of butterfat is contained in a given quantity of cream from different cows, the test in each case being the same?—F. J. M., Angels Camp.

If cream has a certain test, it does not matter a particle what cows produced it, otherwise creameries by their testing would not know how much fat they were buying. A test of 35, for instance, means that in every 100 pounds of cream there are 35 pounds of fat, and 80 pounds of cream of that test would contain 28 pounds of fat, and so on without reference to the cows producing same. If you want to know whether different cows will pro-



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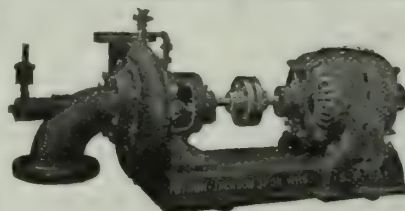
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duce cream of the same test, that is a thing for the separator to look after, and thick or thin cream can be secured by adjusting the separator accordingly. It is, of course, true that

rich milk run through a separator will give richer cream than low testing milk run through the same separator at the same rate of speed without adjusting.—EDITOR.]

A Stud Ranch Near San Francisco.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Purely stud farms are not nearly so numerous as they should be in this country but it is a noticeable fact that there are a few men in the State who, believing in the future of the horse, have gone into the breeding of pure-bred drafters, on a fairly large scale.

Among those ranches which have been turning more attention toward that phase of farming during the past couple of years in the Black Hawk ranch near Burlingame, San Mateo county. For a good many years this place was noted for its fine string of running horses but with the decline of interest in that class of stock it was decided to go into the breeding of pure-bred Shires and since that time no expense has been spared to buy and raise the best stock that could be obtained in this and other countries.

With that end in view a number of fine mares were purchased, most of which were in foal when they were imported and as sires the two stallions, Anwick Arthur and Rampton President, were purchased to head the herd. The former has been mostly used on the mares since that time and has proven that he is a good sire, as his foals are almost without exception big boned and of strong constitution.

Among the younger stallions that have been raised on the place is the two year old Blackhawk Harold, a handsome young fellow that has been shown at the State Fair, where he was a winner in his class this year.

The ranch itself is all that one could wish for as a horse breeding establishment as there are several thousand acres of hill pasture which greatly aids in the growing of sound footed horses and simplifies the feeding problem.

The place is managed by A. W. Ward, who states that he expects to import another bunch of mares and stallions next year and may also bring out a small herd of pure-bred Shorthorns which will be used as a foundation.

At present, there are a number of grade cattle kept on the place but it is the intention to replace these with the better bred Shorthorns.

Being located so close to San Francisco as the place is should also be a valuable asset as it is convenient for the buyers who are in San Francisco.

STEER FEEDING BRINGS RESULTS:

That progress in beef production must lie largely along a better finishing of steers for the market has frequently been emphasized here, and that this is the case is shown by results with a two-year old Hereford steer, "University Joe," raised at the University farm at Davis and recently slaughtered by the Western Meat Company at San Francisco. He is said to have been the best steer that ever went through the plant.

This steer was bred by the University at the University Farm at Davis and exhibited at the California State Fair and Pacific International Live Stock Show at North Portland. It was found in the meat animal's court of last resort, the butcher's block, that "University Joe" exceeded in per cent yield by 6 per cent any steer ever handled by the Western Meat Company. After seeing the animal at the University Farm, F. L. Washburn of the Western Meat Company made a trip to Portland to buy him for Christmas display in San Francisco.

In a letter to the University William E. Hough of the Western Meat Company says:

"We are not complimenting you too highly when we say that the steer was the best that ever went through our plant, and has set an extraordinarily high mark for any steer to equal.

"We figured on weights, weighed empty off the cars, and freight paid from Portland to South San Francisco:

"Weighed in Portland, 1360; weighed in South San Francisco, 1275; live cost, \$11.77 per cwt.; weight of hide, 98 lbs.; weight of fat, 66 lbs.; per cent yield, 70.9.

"The per cent yield exceeds by 6 per cent any steer we ever handled."

The University has on hand constantly at the University Farm just such high-class animals as "University Joe," bred and raised there and used in the stockjudging classes for University and University Farm School students.

TROUBLES IN CREAM TESTING.

To the Editor: In testing cream with the ordinary four bottle Babcock hand power tester we have difficulty in keeping the butter fat in the neck of the bottles from getting cold and solidifying during the last whirl of the bottles. This makes the test unreliable and very hard to read. We use a "full" sample of cream, 18 cubic centimeters and 17.5 cubic centimeters of sulphuric acid which we get from the creamery. The acid seems to be strong enough as it works very well in testing milk. I understand there is a way of testing cream by using a "half" sample or 9 c. c. and adding 9 c. c. of water. My test bottles are graduated up to 50%. I am getting a 9 cubic centimeter pipette but am not sure whether or not that I should use a 9 c. c. pipette with a 50% bottle. Please explain the above method of testing cream.—Mrs. E. B. D., Ceres.

ANSWER BY C. F. HOYT, CHEMIST STATE DAIRY BUREAU.

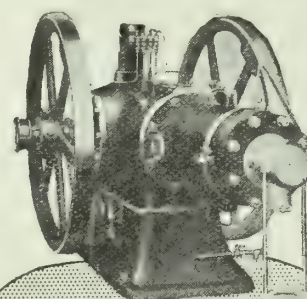
You cannot expect to get accurate results by measuring the cream either with an 18 cubic centimeter, or a 9 cubic centimeter pipette, because the weight of cream such a pipette delivers varies with the temperature, the richness of the cream and the amount of gas or air the cream may contain. To obtain accurate results the cream should be weighed, using either an 18 gram, or a 9 gram sample, as you may prefer.

A 9 gram sample may be placed in a bottle graduated for 18 grams, 9 cubic centimeters of water added, and the test run in precisely the same way as though 18 grams had been used. The only difference is that the reading must be multiplied by 2. There is nothing to be gained by using a 9 gram sample in a 50%-18 gram bottle. If you wish to use 9 grams instead of 18 grams, you can purchase bottles graduated to give the percentage directly on 9 grams.

In attempting to keep the fat from solidifying before reading, I would suggest that you heat the cups of the tester by means of hot water before placing the test bottles in them, that you run the test in a warm room, that you make sure the water added during the testing is hot, and that you place the bottles in a warm bath at about 140 degrees after taking them

from the machine. I suspect that some of your trouble is due to the fact that you may be using too much acid. A fixed amount of acid should not be used, but rather such an amount as will give you a good clear fat column. The amount that will give you this clear fat column can be judged by the color of the milk and acid just after they have been thoroughly mixed together. This color has been described as being "similar to that of coffee after cream has been added."

That grazing facilities for an additional 200,000 sheep and 1000 horses would be provided this year in the forest reserves of Washington and Oregon was the statement made here at the closing session last night of the Washington Wool Growers' Association by Thomas McKenzie of Portland, assistant superintendent of grazing in the forests of these two States.



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68 Post St., San Francisco.

The Los Angeles Poultry and Stock Show.

[Written for the PACIFIC RURAL PRESS
by MRS. SUSAN SWAYSGOOD.]

The Poultry Breeders' Association of southern California has just closed one of the most successful shows of its history. It will be remembered that last January the mammoth tent covering nearly three acres of ground, in which the Association had always held the annual shows, was torn up and carried away by the gale that struck this coast on Saturday, January the fourth. That was a misfortune, because the show was due to be held from the 6th to 13th and the officers had just Sunday and a part of Saturday to rustle a building in which to hold the show. But American grit can overcome bigger obstacles than that, and the show was held in the old post-office building on Seventh and Grand. The same place served for this year's show, but there had been time to arrange this better and it was very much better fixed than last year.

To those interested in the different breeds it is always one's own particular breed that is first looked up in the show room, so accordingly my first thought was for the Orpingtons. But while there was quality to burn, the numbers was not there, nor the competition. There were only 69 Buff Orpingtons and five exhibitors, not enough competition to make a stir, but one thing that pleased me was that a Buff Orpington cockerel won the A. P. A. gold medal and the \$50 medal for the best cock, hen, cockerel, pullet and pen, all standard breeds competing, except bantams, in the show. The next prize of \$35 was also won by an Orpington, a White Orpington taking the second prize. Black Orpingtons numbered 53 and six competitors. All were very fine quality too. In whites there were 72 birds and seven competitors. With seven Partridge Orpingtons the total was 200. There was also a fine display of Sussex Orpingtons from the Sussex Poultry yards of Los Angeles.

The Polish Golden and Silver Bearded were a rather small exhibit, numbering only 25 but the quality was all right. Hamburgs were an awful nice class numbering 38. If these little beauties laid a larger egg, they would have more admirers than they have, for in the old countries they are very much in demand, being small eaters and very quiet.

I think the Houdans were the smallest exhibit in the show, only six being in evidence. There must be a reason for the neglect of this very useful breed in the southern part of the state. It may be that the crest is too heavy for our hot days, anyway we do not see many Houdans and yet the hens are good layers of large white eggs and they carry a good breast, making them a desirable table fowl.

In Buttercups there were 25 birds and five competitors.

Pit Games were a nice lot of birds and though only 17 in count, there were no less than six varieties represented.

Dr. Cornish had a fine exhibit, 71 in count and all real good quality, and as there were nine competitors it made things lively; besides these Games were judged by the one and only judge, J. H. Drevenstedt of Buffalo, N. Y., the biggest man, mentally, in the poultry judging world, who came all across the continent to place

the awards of certain breeds at this show. A win under this judge is something to talk about and the exhibitors were all wearing smiles. Of course the man that won could afford to smile and the others smiled to show they were true blue if their chickens were not.

The Bantam display was not very large but the quality was good. As there is a special Bantam show to be held at Santa Ana I presume the little fellows were being kept back for that show.

Black Minorcas had a good showing, all classes being well represented and the quality was better than I have seen for a long time. It looks as if the breeders were going to come back to the nine-pound cock standard weight for Minorcas. Late years they have been allowed to dwindle down until many are no larger than a Leghorn. With a total of 108 and eleven competitors there was something doing in Minorca alley and price of winning stock ranged high. White Minorcas were not so large in numbers but the quality was good, as was also the Buffs originated by Lingren Brothers of Kingsburg.

Mr. S. O. Lingren is now a special Minorca judge, which is as it should be. A man who devotes his time to breeding and raising one breed is more competent to judge them than a man who only sees them in a show room. Will Purdy of Washington judged the Buffs because a judge is not allowed to judge his own exhibits.

The total Leghorns exhibited was 136, divided as to variety but with the White Leghorn dominating as is usual, 91 White and 45 in the Buff, Blue, Silver and Black Leghorns, which gives every lover of his particular variety a chance to look on them at their best. There is not anything in the hen line more graceful or sprightly than a well cared for Brown or Buff Leghorn, but they do not find so many admirers on this coast as the White variety.

The old time Langshans had a good showing considering that they have been put in the background for the newer varieties. There were 37, all good birds, and five competitors.

One of the best exhibits was the Rhode Island Reds. And every winning place was hotly contested, for with a total of 150 birds there were 21 competitors, some fun watching the judge, and more fun later when they told how Judge Drevenstedt placed the ribbons.

The old Brahmas were also on deck, small in quantity but large in quality. Three light Brahmas and four of my old favorites, the dark, one of which was valued at \$1000, a cock bird and a cockerel at \$500, two pullets at \$50 each, so you see old-fashioned things and birds come into there own some time and let us hope old-fashioned folks will do the same. Time was when I bought these good old dark Brahmas hens and pullets for two shillings each, which means 50 cents. Wyandottes are deserving more popularity than is falling to their share, but at the Los Angeles show they were fairly well represented both in numbers and quality; in all varieties there was 145, Partridge Wyandottes predominating and these were surely beauties.

But the surprise of the show was the Rock exhibit. Surely these Rock men had put there heads together so as to come out in numbers anyway, for in all varieties the total was 395 Plymouth Rocks.

A goodly number of these in the Barred variety had better have staid at home looking after the domestic side of the poultry business in laying eggs to make broilers of, as it is quite certain they would never accomplish much in a show room as birds of fine feathers.

But there was a lot of excellent birds too and every ribbon was well earned, for Judge Hinds placed the awards on Rocks and everybody knows he is mighty particular. The exhibit of White Rocks could not be beat anywhere, the quality was great in all classes even where the birds did not get placed. Altogether the Plymouth Rock exhibit was out of the ordinary for late years.

The turkey exhibit represented, about all the colors and varieties, buff, black, bronze, white Holland and Narganset and there were some very fine specimens of each. Ducks too, were

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well represented but more Indian runners than others. Rabbits and hares were there in number and variety both, some immense bucks and some very prolific does, with litters. All kinds of song birds and talking parrots were to be found and pigeons galore. Not being a pigeon fancier, I can only say that by the amount of ribbons fluttering in the breeze the judges must have found the quality there as well as the numbers and there were surely pigeons in numbers, which means that this branch of the poultry industry is being well cared for and getting in favor.

The attendance was good and the Association gave its annual banquet before the closing of the show at which there was a feast for the body and a flow of wit that helps to lubricate the wheels of thought and aids those who participate to tackle the coming year with a better grip, for after all human endeavor appears to be somewhat dependant upon encouragement and a hope of reward. I don't really think this is as it should be, but we have had that theory set before us for so many thousands of years that it is pretty well ingrained into humanity and we can't rub it out with soap and water, it just has to wear out.

Owing to rheumatism or laziness, I did not exhibit at Los Angeles this year, hoping to win trade on my merits earned other years, so was an impartial looker-on only this year. Next year I am going to get there with both feet unless "The bogey gets me if I don't watch out."

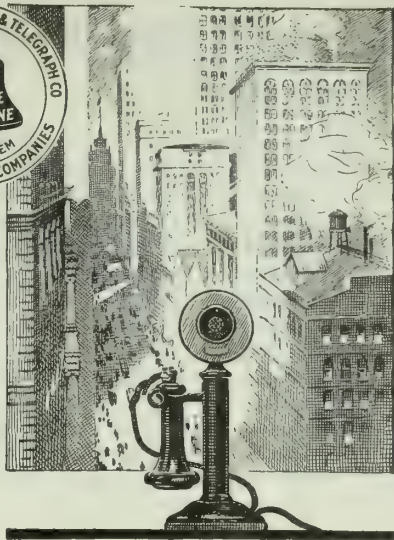
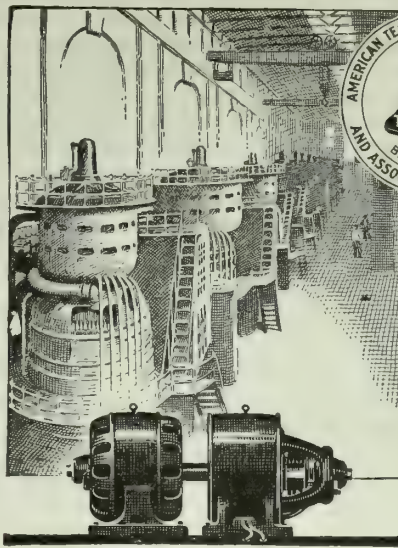
ANIMAL FOOD AND HEALTH.

In the minds of American poultrymen there is little doubt but what animal food is a necessity in profitable egg production and not injurious when properly fed. There seems to be a little question in England, as the following, which contains some profitable pointers, will show:

There are many authorities who condemn the use of animal food in every shape and form, and many are the diseases which they claim owe their origin to this method of feeding. First, it is claimed that raw meat will cause diarrhoea. Doubtless it has a tendency in this direction, but this tendency is not so great if it is cooked. It is also said that it is a cause of liver disease, since meat is of a stimulating nature. I cannot, however, accept this statement without uttering a protest.

Is it stimulating? I contend that it is not so, since it gives strength of long duration, whereas a stimulant, as its name indicates, is of a fleeting nature, and its influence is only felt for the time being. Animal food is more like that which the birds would obtain in their wild state, and similar to what their instinct teaches them to secure from the earth when they are at liberty.

Feather-eating and comb and skin diseases are also among the complaints stated to be caused by giving animal food. There is no doubt whatever that if animal food be given in excess it then becomes a grave menace to the health of the fowls. But what food is not injurious, if fed to excess? The result of too much animal food is to cause the body to get into a heated condition, which is the forerunner of much trouble. This may, however, be counteracted to a large extent if plenty of vegetables be given. In this manner one helps to balance the other.

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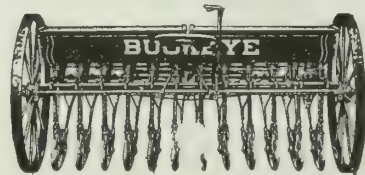
Hens from all over the globe to compete throughout a year in an international contest for the egg-laying championship of the world, is the latest suggestion for the Panama-Pacific Exposition.

This suggestion comes to I. D. Graham, assistant chief of the department of live stock of the exposition from Sydney, New South Wales, and is proposed by A. A. Dunnington Jr., honorary secretary of the Australian Laying Competition, and is enthusiastically indorsed by Miller Purvis, chairman of the exposition's poultry advisory committee in Idaho.

The contest, as proposed, would begin in November of this year and end in the following November. The champion egg layer of the world at present is a hen belonging to the Oregon Agricultural College, which presented its owner with 303 eggs in a year.

CHICKENS FED SAND.

The Greater New York Live Poultry Dealers' Protective Association has applied to the department of agriculture to make farmers stop feeding chickens with a certain kind of sand paste to

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make them weigh more. It was charged New York consumers are paying for from 150,000 to 300,000 pounds of sand in poultry each week.

The poultry show given under the auspices of the Porterville Poultry and Pet Stock Association, at Porterville, last week was well attended and there were 300 birds entered, many of them being high in quality.

The Home Circle.

Finding a Heart.

It was not the sort of day one would look for in New England the last week in December. The thermometer stood at 52 degrees and the sun fell warmly on the bare, wet earth, drawing up little breaths of vapor on the sunny slopes. There was a look of weariness on the face of nature, as if the quiet were the coma of exhaustion. It certainly was a reaction. For 24 hours the rain had fallen in torrents, breaking up the ice and choking the streams. The wind had been almost a gale, and field and highway were strewn with evidences of the storm's power.

At the gate of a handsome house stood its owner, Mr. Ambrose Winchester, accounted one of the wealthiest men in the town. He seemed to be taking in the magnitude of the storm, as his eye swept over his well-kept domain from the thrifty orchards in the rear and the woodland beyond to the smooth meadows in front, where a miniature river seemed to have sprung into existence.

A young man in a buggy drove up and stopped.

"Good morning, Mr. Winchester!" said he.

"Good morning, Hutton!" said the other, gruffly.

"I've driven over this morning, Mr. Winchester, to ask you to extend the time on that payment. I've done my best to raise the money—"

"It doesn't matter, Hutton. I've made up my mind to foreclose on that property."

Hutton grew pale.

"Surely, you wouldn't do that!"

There was entreaty in his voice and eyes.

"You know the factory shut down to half-time all summer. Even at that I was saving toward the payment when my wife's long illness began. Doctor and nurse bills ate up what I'd saved for you."

"Same old story! A man has no right to get married until he can support a family, doctor's bills and all. I've no sympathy with such nonsense. People marry on nothing and then expect other people to support their families. Sooner they find out it can't be done the better. Now, I take good care of my family without anybody else's help, and I always expect to. If you can't do as much, then it's your fault, not mine. See? I shall foreclose, and now let us have no more words about it."

With this the farmer strode into the house, the young man driving on slowly with bowed head.

The farmer's little girls, Ruth and Mabel, came dancing out, and their mother followed them onto the porch. "Now, be sure and leave grandma's at 4 o'clock, so as to get home before dark."

"Yes, mamma, we will," they promised glibly and started off on a run.

Grandma Winchester lived about a mile away, on an unfrequented road, but the children had made the trip often since they were quite small. So now they chatted happily along the familiar path, possessed with a childish interest in everything around them, even to the washouts the rain had made in the road and gutters. But when they neared Blue creek they stood in sheer surprise.

The little summer brook they had sometimes waded across had grown to

an angry torrent and overflowed its steep banks and was rushing madly along, bearing ice, loam and branches of trees. In fact, a tree had lodged against the bridge, and its limbs so nearly covered it that it was difficult for our little travelers to get across.

"Oh, how the bridge trembles!" cried little Mabel.

"It's all this ice pushing against it," said Ruth.

The wind began to rise, and the blue gray clouds settled down, darkly obscuring the sun, which had made the day seem so fair. The children shivered in unison with the change and quickened their pace.

At 5 o'clock that afternoon the two little girls stood appalled at the Blue creek crossing. The brook had swollen more and was now a raging torrent. The place spanned by the bridge was the narrowest, and the narrow planks, with the frail side railings, held to each bank as if by a thread.

"See, Mabel, we must hurry," said Ruth, "or our bridge will be gone. Take my hand, and we'll run across quick."

"I'm awful 'fraid," said the child, with quivering lips.

"Well, I'll go first," said her sister, encouragingly, "and you'll see how easy it'll be. Now, then, one—two—three!" and clasping hands the two little girls started to run across the reeling bridge. Perhaps it was their weight, perhaps it was at that very moment the fastenings were ready to give way, but certain it was that when they reached the middle of the bridge it snapped its connections at each side, and with lightning velocity shot down the stream, the little ones clinging to each other and the hand rail.

The frightful speed at which they were going, together with the awful roar of the water and the suddenness with which the whole thing came about, gave the children no chance to feel the extreme terror that their hazardous position would naturally have inspired. They had only one thought, only one instinctive feeling, and that was to cling with a death grip to the bridge and each other. It was reserved for a spectator to the scene, who arrived on a little knoll that commanded a view of the whole transaction, just as it occurred, to experience the full agony of their terrible situation. This was their father, Ambrose Winchester.

Like one gone mad, he ran desperately along the bank after the small barque, his eyes fixed on the two little swaying figures, dark brown and flaxen curls mingling as they were tossed by the wind, until a small patch of woodland cut off his view. Still he ran, muttering cries, prayers, until his breath gave out and his gasping throat could only give vent to something like sobs.

When he passed the little patch of woodland, he saw the bridge had stopped, caught by the branches of a tree fallen across the stream. But the bridge itself was ready to fall to pieces now. The rail to which the children hung was swaying and bending and threatening every moment to part company with the rest of the structure. At that moment a figure plunged boldly into the torrent with a long board in his arms, and before the reeling, breathless father could gain the spot, had taken both children onto the board and was struggling toward the shore. Mr. Winchester was just in time to catch his children as they came to land, and as his eyes fell on their

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deliverer he saw it was Hutton.

"Here, put the children into my buggy and wrap them in the robe," he gasped. Then, following them, he drove at breakneck speed without a backward glance.

Mrs. Winchester came to the door with an inquiring look. When Mr. Hutton lifted in his arms the half-animate forms of her children and handed them to her, one by one, she grew ashy pale.

"Oh, what—what," she cried sharply, "what has happened?"

Mr. Hutton explained briefly as he followed her lead, carrying the oldest child, while she conveyed the other.

"And you—you are wet," she exclaimed, stealing a glance from her darlings to notice his condition.

"Never mind me." He turned to go.

"Oh, don't go yet," said Mrs. Winchester, appealingly. "My husband will be home soon, and I want you to see him. I can't thank you; words are so weak."

"No thanks are necessary," said Hutton, coolly. "And, as for your good husband, I've just parted company with him."

With that he strode from the room, and wrapping himself in his warm robe drove home.

The next morning Hutton stood at his gate, his hands in his pockets, evidently in a brown study. He was pondering on what move he would make next in this puzzling game of life, now that his home was to be snatched from him. He wore a dogged look, which by no means softened as he observed Mr. Winchester driving up. The latter stopped before the gate, and an observer would have noted that the men seemed to have changed positions. Hutton nodded coolly, without changing his attitude or expression, while Winchester breathed quickly and looked nervous.

"Hutton," he said, "I have called to see you about that little affair we were talking of yesterday."

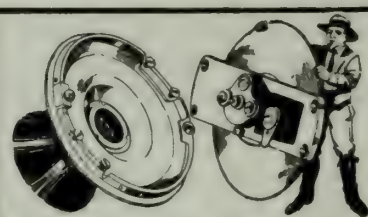
"Ah, yes!" observed the young man, jingling a bunch of keys in his moneyless pockets.

"I remember. You are a man perfectly competent to take care of your own family—"

"Hush! Don't!" begged Winchester. "Here, take this as an evidence of my gratitude. It's a quit claim of the place you occupy."

"And do you suppose," said Hutton, with a deep-drawn breath, "that I'm saving other people's lives and risking my own as a matter of dollars and cents?"

"No, no! God forbid!" said the farmer. "Listen. I've changed since yesterday. Yesterday, as I saw you save my little ones, I felt a great pain here—he beat his breast—"this morning, as I thought of what I might do to make your life easier and the encouragement I could give you not to be beaten in the great struggle for life,



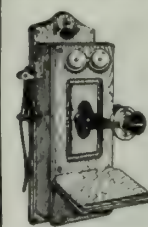
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I felt a great joy instead of pain. This is not a matter of compensation. It comes from the heart."

The two clasped hands, and in that moment something new and deep and warm and strange came into the lives of each—the finding and recognition of a heart.—Chicago News.

TOO MUCH MOTHER IN THE VINEGAR.

To the Editor: In the making and keeping of apple-cider vinegar, how shall I prevent the excessive formation of the so-called "mother"?—M. M., Lakeport.

ANSWER BY PROF. W. V. CRUESS OF THE UNIVERSITY OF CALIFORNIA.]

You have neglected to mention your method of manufacture, so I am assuming that you are making your vinegar by the slow process. During the manufacture of vinegar by the slow process, if the film of mother is disturbed it may sink to the bottom of the tank and a new film will take its place. This new film in turn may be disturbed and sink to the bottom, in this way forming a considerable quantity of mother. This mother that sinks to the bottom of the tank produces no vinegar acid but actually tends to destroy that already formed. To maintain the first film of mother formed continually at the surface, a lattice work of light redwood or oak strips may be floated on the surface. The mother will form between the strips and will be held by them at the surface.

A second method of preventing the formation of excessive mother during the making of the vinegar by the slow process is to fill a cylindrical tank with beechwood shavings and place this tank horizontally in a square tank. The tank containing the shavings should be made with a slit between each stave and the staves should be bound around the heads of the tank with a rope; iron hoops would be attacked by the vinegar. The tank containing the shavings should be hung and fitted with a wooden axle so that it may be turned once a day. Both tanks, that is the complete apparatus should then be covered over with tight fitting boards. The square tank should be filled so that the vinegar stock comes to the axle of the tank containing the shavings. The apparatus should be as nearly air tight as possible, except for two 1/2-inch holes bored at each end above the level of the vinegar stock to admit air for the vinegar fermentation to go on. The tank containing the shavings should be turned once or twice daily. This wets the shavings and exposes them to the air that comes in through the holes and gives a rapid formation of vinegar. The

holes may be plugged if the temperature gets too high or more holes may be made if the temperature is too low. The temperature should be maintained at about 85° F. The apparatus should be made to hold about 500 gallons of vinegar stock when filled to the axle of the shavings tank.

The formation of mother on the vinegar after the vinegar has been made is due to the exposure to air. If the vessels containing the vinegar are kept absolutely full and tightly bunged or corked there will be no excessive formation of vinegar mother. Bottled vinegar should be filled as nearly to the cork as possible and tight corks should be used so that there will be as little air as possible for the formation of mother. Better still is to fill the bottles within an inch of the cork, cork the bottles and tie corks and heat the contents of the bottles to 150° F. This may be done in a wash boiler with a false bottom if the output of the plant is small or may be done in a wooden trough fitted with a false bottom and a steam coil for a larger factory. The trough may be filled with water to half the height of the bottles, the whole apparatus covered with a canvas and the vinegar in the bottles heated to 150° F.

If you are making vinegar by the ordinary generator process and are troubled with an excessive formation of mother in the generator, it may be said that there is no satisfactory way of controlling this trouble. If the material is scraped off the top of the generator often it will help matters but at best the generator should be taken apart and the shavings cleaned in hot water and dried before putting back at least once a year.

Berkeley.

Footie, the comedian, dined one day at a country inn, and the landlord asked now he liked his fare. "I have dined as well as any man in England," said Footie. "Except the mayor!" cried the landlord. "I except nobody," said he. "But you must!" screamed the host. "I won't!" "You must!" At length a petty magistrate took Footie before the mayor, who observed that it had been customary in that town for a great number of years always to "except the mayor," and accordingly fined him a shilling for not conforming to ancient custom. Upon this decision, Footie paid the shilling, at the same time observing that he thought the landlord the greatest fool in Cristen-dom—except the mayor.

An unprepared man went to address a Sunday-school. Thinking to be funny, he asked this question: "What would you do before so many bright boys and girls, who expected a speech from you, if you had nothing to say?" "I'd keep quiet," replied a small boy.—St. Louis Mirror.

Garrulous Stranger (on a train)—"My wife's name was Wood. What was yours?" Crusty Old Bachelor—"I guess mine's was 'wouldn't.' I didn't get her."—Washington Star.

"In what part of the body is the liver?" asked a teacher, while examining the class in physiology; and she was a good deal surprised when the tall boy replied, "South of the lungs."

Miss De Pretty—"I don't see how you whistle through your fingers that way. I could never do it in the world." Mr. Goodheart (wishing to compliment her delicate little hands)

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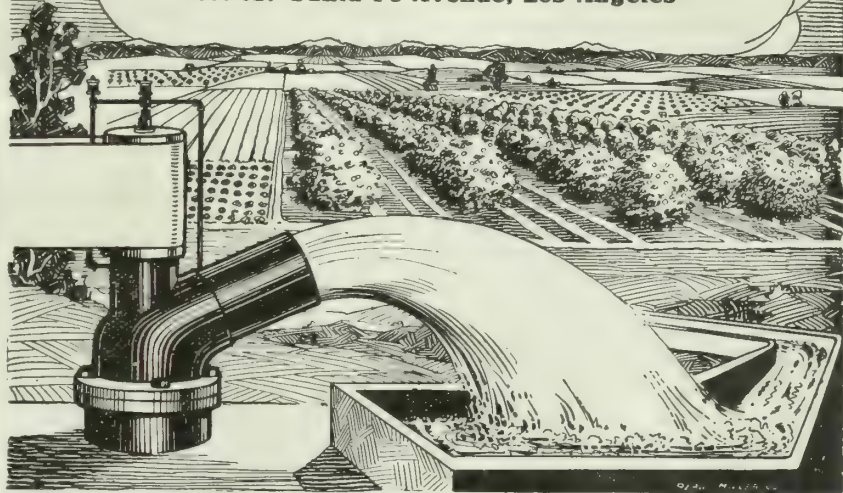
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—"No, Miss De Pretty; if you should try it, your whole hand would slip into your mouth."—New York Weekly.

HOW AMERICAN PACKERS WILL EVEN-UP FOR FREE TRADE.

Arthur Wallace Dunn gives some facts in the Review of Reviews which should be considered by our stock growers before they make up their minds how they like free trade:

The Argentine beef producers are favorably situated for their business. These fast plains of pasture stretch westward from Buenos Ayres 125 miles, and much farther north and south, and are within easy reach of a tidewater market. Most of the cattle are produced within seventy-five miles of Buenos Ayres, and many of the stock farms are near Rio de la Plata and the Parana. Some of the abattoirs are on the banks of these streams, and where the water is not deep enough for ocean steamers the beef is loaded in barges and transhipped. The packing establishments are situated at the water's edge. In the matter of transportation Argentine has a great advantage over the United States, as rail shipments are required only for short hauls.

In considering whether Argentine beef will become a rival of American beef and cause a reduction in the price in the United States, the question naturally may be asked whether the American packers who have "invaded" South America will ship Argentine

beef to this country in large quantities and sell it in competition with the beef they produce here, and thus force down the price of their own products. In that connection it is interesting to know what the American packers have done in South America. In Buenos Ayres state, which includes the largest cattle district, there are eight large meat-packing establishments. Six are owned by Argentine and English interests, one by Swift & Co., and one jointly by Armour and Morris. Swift & Co. have an establishment at Montevideo, Uruguay; also an establishment in the Southern Argentine sheep country for mutton. The Sulzbergers have a beef plant at Sao Paulo, Brazil, and are said to have recently leased another in Buenos Ayres.

The Americans had an agreement with their rivals in the matter of apportionment of trade, but they did not agree in the matter of fixing prices for beeves or meat. As a result the price of cattle on the hoof has been largely increased. Steers weighing 820 pounds, which formerly sold for about \$45 a head, are now sold for about \$75 a head. The prices before the Americans went to Argentina ranged from \$25 to \$44 per head. The higher prices have made the Americans popular with the cattle raisers, whose confidence they have gained, and in spite of the apportionment agreement, the Americans have the pick of the stock and a constant supply for their plants. As they undersell the dressed meat in the European markets, they are far from popular with the English and Argentine packers.



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Home Economics.

Preparing the Plastered Wall for Paper.

[Written for the PACIFIC RURAL PRESS.]

Although the kalsomined wall has been very popular for the past few years, and will perhaps always be to a large extent, on account of being more sanitary than some other kinds of wall coverings, the papered wall has never entirely lost its place, as old walls, especially, can be made to look better with paper than anything else.

Very often discouraging results are had with papered walls on account of improper treatment of the walls before the paper is hung, and for that reason it is better to have them in good condition before the papering is started.

Where the room has been papered before and there are loose places either in the plaster or in the old paper, such places should be pulled down. When the plaster is loose, it is advisable to cut the loose place out, and if it is a large place, have a plasterer patch the wall up; but if it is only a small place, a small amount of plaster of paris, moistened with water sufficiently to work freely, may be used in the same manner that putty would be, but care should be taken to leave a smooth surface, or the projecting particles will likely tear through the paper. Cracks, nail-holes, or other small imperfections in the wall should be filled with the same surface and also to allow no opportunity for the same hole to be made in the new paper.

Where there have already been two material so as to make a good smooth or more coverings of paper on the wall, it is best to tear off all of the old paper; the best way to do that being to thoroughly soak the walls with water, then with a putty knife or other scraper tear off the old paper, which will usually come off very easily if soaked sufficiently long.

After the walls have been thoroughly cleaned and all holes filled up, they should receive a good sizing made of flake glue and water. To make this sizing take a water bucket in which the glue is soaked in cold water for several hours, or over night if possible. After it is thoroughly soaked, it should be mixed with boiling hot water to a consistence where it will spread easily on the plaster.

By going over the entire surface with this preparation, the walls are in good shape for the paper, and, what is more important, will allow of a lasting job if the work has been properly done.

To Blanch Almonds.

Cover almonds with boiling water, and let stand 2 minutes; drain, put into cold water and rub off the skin; dry between two cloths.

SALTED ALMONDS.—One-fourth pound of almonds, one-third cup of olive oil. Blanch and dry almonds. Heat olive oil in small sauce-pan. Add one-fourth of the almonds and fry until a delicate brown, stirring to keep almonds constantly in motion. Remove, drain on old linen or unglazed paper, and sprinkle with salt.

CANDIED ORANGE PEEL.—Peel of two oranges, one-half cup of water in which orange was cooked, one cup of sugar.

Wipe the orange and remove the peel in quarters. Cut it in narrow strips, cook in boiling water until tender; drain, and with edge of teaspoon remove superfluous white. Make a syrup of the sugar and water, add the orange peel, cook slowly until it is reduced to dryness, using care that the peel does not stick. Drain and roll each peel in coarse granulated sugar.

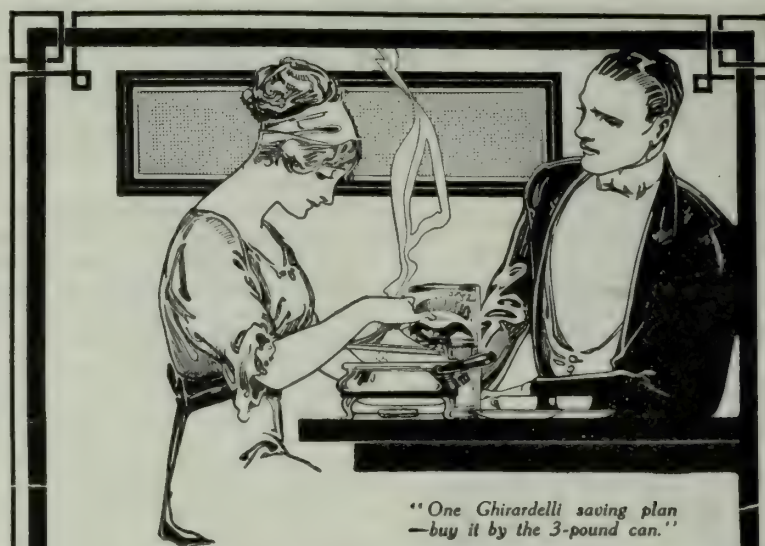
ENGLISH FRUIT CAKE.—One pound of butter, 1 lb. light brown sugar, 9 eggs, 1 lb. flour, 2 teaspoonfuls mace, 2 teaspoonfuls cinnamon, 1 teaspoonful of soda, 2 tablespoonfuls of milk, 3 lbs. currants, 2 lbs. raisins seeded and finely chopped, ½ lb. almonds blanched and shredded, 1 lb. of citron thinly sliced and cut in strips.

Cream the butter, add sugar gradually, and beat thoroughly. Separate yolks from whites of eggs; beat yolks until thick and lemon colored, and the whites until stiff and dry, and add to first mixture. Then add milk, fruit, nuts, and flour, mixed and sifted with mace, cinnamon and soda. (Fruit should be rolled in flour.) Put in buttered pans, cover with wax paper, steam three hours, and bake one and one-half hours in a slow oven, or bake four hours in a very slow oven. May be made into small cakes, wrapped in holly paper and sent as gifts.—M. H. Haynes, Colorado Agricultural College.

Care of the Sewing Machine.

It is worth while bestowing all possible care on the sewing machine when working it or when unused. Don't jerk either the handle or treadle, but work quite evenly. Keep the machine free of dust, and properly lubricated, not soaked with oil, so that the grease is not splattered over the material or table. Throw off the driving strap and detach the driving wheel when not in use, to prevent a meddlesome child from interfering with it. Always keep the cover locked, and on no account place hot vessels of any kind on the polished surface, which soon disfigure polished surfaces, a condition not easily remedied. Wipe over occasionally with a clean chamois leather, wring out in tepid water, and when dry thoroughly rub in a little furniture polish. Always use needles that are made for a particular machine; others may cause trouble. A noisy machine can be quieted by placing it on rubber placed under the feet of a treadle machine or underneath the four corners of the base of a hand machine. When the presser foot gets blunt, get it sharpened up a bit; it makes all the difference to good work. If not well acquainted with the working parts, don't detach them when cleaning, or there is sure to be trouble in readjustment. It is the cheapest plan to give the work to a mechanic to do, but with care nearly all the parts can be satisfactorily cleaned while in position. A piece of wire flattened at one end and worn linen are useful when cleaning, but don't use fluffy material, as it takes up time clearing away the pieces. There are many other don'ts and do's that come to one that aid in the proper keeping and preservation of this useful and necessary labor saver.—C.

"No, my man, this is not mine. It was a twenty-dollar bill I lost." "But it was a twenty-dollar bill before I got it changed, sir." "What did you get it changed for?" "Och, sure, so the owner could convainiently reward me, sor."



Girls—

You'll want to have it taste just right, especially if it's for "him," so be careful of the directions: Make a paste, using a tablespoonful of

Ghirardelli's
Ground
Chocolate

—to a cup of boiling milk—stir for a moment—then serve this delightful beverage. Watch his eyes sparkle—note the satisfaction in every sip—hear him murmur "You're a dear."

But be sure it's Ghirardelli's.

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The earth of the mountain is of a peculiar consistency, and is supposed to be the result of a gradual decomposition for many ages of millions of sea shells. For commercial use the only process it goes through is grinding. It is used as infusorial earth and has high value for insulating purposes, and is used much in jewelry shops as a polish. In weight it is very light and fluffs like feathers.

A large market for the earth has been developed in Pennsylvania, and it is expected that its value will become great throughout the country.



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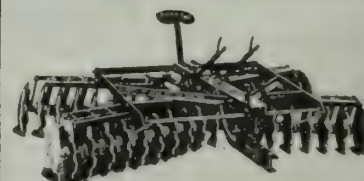
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WHOLESALE DISTRIBUTORS.

Our Young Folks

The Fairy and His Bell.

"Rings on her fingers, bells on her toes,
She shall have music wherever she goes."

One lovely morning in June a little fairy was working in his garden. He was busy at a bed of ranunculuses, which were his favorite flowers. Some months before he had set out the roots in small holes, which he had made with a sharp pointed stick; and, when the tender plants came up in the spring, he walked about among them every evening, watering them out of a snailshell, which he filled at a brook near by. The ranunculuses were now quite tall; and this morning he was very busy with a little feather brush, made of a wren's tail, dusting the buds which were nearly ready to open. While thus engaged, he heard the distant sound of bells.

"Hello!" said he; "what's that? Somebody's house afire, I suspect."

As he could do nothing for anybody in such a case, he kept on dusting his flower-buds. But the sound came nearer and nearer.

"What can it be?" he said again. "It certainly is not a traveling church?"

In a few minutes, however, he found out what it was. A tall gray horse, bearing on his back an old woman with rings on her fingers and bells on her toes, came dashing toward him; and in an instant the animal had crushed through his ranunculuses, broken almost every flower-stalk, and ruined the whole bed. The little fairy, who had just managed to get out of the way himself, gazed upon his dreadful loss with a face full of horror and despair. But directly he was filled with indignation.

"I will find out that reckless person!" he cried. "She cannot escape me!"

So saying, he rushed to his home at the foot of an ancient tree; and from a little cavity he brought out a sparrow, which a short time before he had tamed and broken to the saddle. Hastily saddling and bridling the sparrow, he sprang upon him, and rode away with the speed of an arrow. It was easy to trace the course taken by the gray horse and his rider from the sound of the bells that the old woman wore; and in a very few minutes the fairy was skimming along by her side, without, however, attracting from her the slightest attention.

Reaching the border of a small creek, the old woman reined in her steed and dismounted. Standing by the water's edge, she leaned against the horse and appeared lost in thought.

"Now's my time," said the fairy to himself; and he hastened to a fire that some charcoal-burners had made at a short distance, and, seizing a small piece of blazing light-wood, he spurred his sparrow back to the creek. In a moment he had set the horse's tail on fire. The noble animal did not perceive this for a little while; but the instant he felt the fire he gave a great leap, jerked his bridle from the hand of the old woman, and dashed madly away. The fairy rode over the creek, mounted a tree on the opposite bank, and guided his sparrow to the very end of a branch which hung over the water, quite near the old woman, but still out of her reach.

"Ho! ho!" cried the fairy to the old woman, who was standing with open

mouth and eyes looking in the direction her steed had taken. "Ho! ho! Now you are paid up for tramping down my ranunculuses. I should like to know how you are going to get back to Banbury Cross now."

The old woman looked at the fairy for a moment, and cried:

"So that was one of your tricks, was it? Well, it matters little. I don't care whether I ever get back to Banbury Cross again or not."

"Why, don't you live there?" asked the fairy.

"Yes," replied the old woman, "I do. But one hates being made the object of such general curiosity. I can never mount my horse without bringing together a crowd to look at me."

"Well, that's because you wear bells on your toes," said the fairy.

"But I can't help that," said the old woman. "I don't wear them because I like them."

"Why do you wear them then?" asked the fairy.

"Well," said the old woman, seating herself upon the ground—for it was evidently difficult for her to stand without support—"it's a long story, but I'll make it as short as I can. Many years ago, when I was a young woman, a prince lived in a palace near my mother's cottage. He wore upon his right hand a most magnificent diamond ring, and he declared that he would marry any young woman who could produce one as fine. I loved the prince; and, in order to become his wife, I bought all the rings that I could possibly procure by selling everything I owned. But not one of them was fine enough; none of them would match the one he wore. Here they all are," she said, stretching out her hands. "I wear them yet."

"They are very pretty," said the fairy, "but I should never have spent all my money for mere jewelry."

"What would you have bought?" asked the old woman.

"Ranunculuses," replied the fairy.

"Humph!" said the old woman, contemptuously; and she continued her story: "About a mile on the other side of our cottage there lived an old Jew, who owned one of the finest diamonds in the world. When he first got it, he hid it in his house; but every night the thieves would rummage all over it dwelling, upsetting everything in their search for this valuable jewel. He then took it, and hid it in a secret place in the woods; but, although he put up a notice to the thieves, telling them it was no longer in his house, they would not believe him—rummaging every night as bad as ever. So he took his diamond to a deep ravine, whose steep sides were everywhere utterly inaccessible, being just as smooth as glass; and he dropped it down to the bottom, where, a hundred feet below the surface of the earth, it glittered and shone like a star. When the thieves came and gathered around the steep ravine, and saw that the diamond was really there, they ceased to trouble the dwelling of the Jew, who thereafter slept in peace."

"When I happened to see this dazzling jewel, as it lay at the bottom of this dreadful abyss, I instantly determined to get it if I could, and by its means marry the prince. So I procured a long cord, and at the end I put a stone. I covered the bottom of the stone with candle-grease, and one moonlight night I crept softly to the brink of the ravine, and gently lowered my cord until the stone touched the diamond. Then, after waiting a few mo-

ments, I drew up the stone carefully and slowly. When I took it in my trembling hand and turned it over, the diamond was not there. Overcome with disappointment, I sank against a tree. When the Jew came in the morning to look at his diamond, he gave a loud cry.

"'Hello!' he said: 'who has been putting candle-grease upon my dearest jewel?'"

"Then turning, he saw me, with the stone and the cord in my hand, still leaning against the tree."

"'Oh, ho!' he cried. 'So you have been trying to rob me, have you? You thought my diamond was so light that it would stick to a greasy stone, did you? Well, miss, you shall not come about here any more without my knowing it. Mind that!'"

"So he instantly took these bells out of his coat pocket and tied them to my toes. Since that time it has been almost impossible for me to walk. I have been compelled to ride everywhere I go, and I am so ashamed at the sound of my bells that I always ride just as fast as I can. That is the way I came to ruin your ranunculuses."

"I am very sorry for you," said the fairy, "although I think you were trying to do a mean trick when you fished for the diamond. If I can find your horse, I will bring him back to you."

So on his sparrow he rode rapidly after the horse, and soon saw the animal grazing in a field. His tail was not burnt much; for he had jumped in the creek and had put it out, and was now eating grass quite contentedly. The fairy gathered a large quantity of the finest clover, and covered himself and his sparrow entirely with it. Then he flew in front of the horse, which, attracted by the delicate morsel floating in the air, endeavored to seize it in his mouth. The bunch of fragrant clover, followed by the horse, flew along the creek until it reached the spot where the old woman stood behind a little bush. She instantly seized the horse's bridle, and the fairy shook off the clover. The horse heaved a heavy sigh, but said never a word. I am very much obliged," said the old woman; "and if you will come to Banbury Cross, I will give you some ranunculus-roots, and you can make another garden."

"Thank you," said the fairy, sadly; "but they would be of no use to me now. It's easy enough to get good roots, but I shall never feel like planting ranunculuses again."

"Well," said the old woman, "we all have our troubles. Here am I with these horrid bells which bring all the town around me when I go out, and which entirely prevent me from walking, even when at home."

"Such a thing would not trouble me long," said the fairy.

"How would you prevent it?" asked the old woman.

"I'd cut the string and take the bells off," said he.

"Oh, I would not like to do that," said the old woman. "I've worn them so long that I do not think it would do to make a change at my time of life. But I will cut off one of them, and give it to you to remember me by."

So saying, she took a pair of scissors out of her pocket, and, cutting off one of the bells from her toes, presented it to the fairy. He thanked her, and told her he should always remember her by it. Then she mounted her horse and rode swiftly away. The fairy took his bell home, and hung it up in his garden. Every

afternoon he rung it when it was time for the four-o'clocks to shut up.

When the fairy died and the bell fell down and was lost, the four-o'clocks got out of their regular habits; and now we scarcely ever see any that shut up exactly at four o'clock.—Frank R. Stockton, in Housewife.



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SOUTHERN PACIFIC
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FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Farm Development, Hays.....	\$2.00
Manual of Laws.....	2.25
Farm Buildings.....	2.20
Breeding Farm Animals, Marshall.....	1.60
Hog Book, Dawson.....	1.60
The Dairy Farm, Gurlier.....	1.10
Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoesmith.....	.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees and California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
New Onion Culture, Greiner.....	.50
American Cattle Doctor, Dadd.....	1.00
Home Pork Making, Fulton.....	1.10
Farm Gas Engines, Brate.....	1.50
The Book of Alfalfa, Coburn.....	2.00
Swine in America, Coburn.....	2.50
Feeds and Feeding, Henry.....	2.25
Date Growing, Popenoe.....	2.00

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THE MARKETS

San Francisco, Jan. 21, 1914.

Cereals.

WHEAT.

The Coast markets continue to show an upward tendency, notwithstanding the general lack of important demand. Holders in the north, who have most of the remaining supply, are extremely firm in their views, and prices here will probably be marked up a little in the near future.

California Club, cttl...	\$1.52 1/2 @ 1.55
Forty-fold	1.55 @ 1.57 1/2
Northern Club	1.52 1/2 @ 1.55
Northern Bluestem ...	1.70 @ 1.75
Northern Red	1.55 @ 1.70

BARLEY.

Brewing and shipping grades are about out of the market, though nominally valued at about the former prices. The speculative market is dull and easy, and the spot grain receives little attention, being weak at lower prices.

Brewing and Shipping...	\$1.37 1/2 @ 1.42 1/2
Choice Feed, per cttl...	1.25 @ 1.27 1/2
Common Feed	1.20 @ 1.25

OATS.

This grain receives very little attention at present, the movement of seed being practically over. Red seed has again declined, and black is very dull.

Red Feed	\$1.65 @ 1.85
Seed	2.00 @ 2.10
Gray	Nominal
White	1.45 @ 1.50
Black Seed	2.50 @ 3.00

CORN.

The Eastern markets are still in very easy condition, but so far no further change has been made in local quotations, spot supplies being rather light, with no regular large demand. No California stock is offered.

California Yellow	Nominal
Eastern Yellow	\$1.82 1/2 @ 1.85
Eastern White	Nominal
Egyptian	1.70 @ 1.75
Milo Maize	1.70 @ 1.75

RYE.

The movement of seed is about over, though occasional small sales are made at about the range quoted.

Rye, per cttl.....	\$1.45 @ 1.50
Seed	1.65 @ 1.70

BEANS.

The predicted advance in bean prices has apparently started, Bayos being marked up again, while large whites, which have been unchanged for some time, are also higher. Other slight advances are noted in both varieties of red beans. The market is by no means active, but inquiries are beginning to appear with more frequency, and a gradually expanding movement is expected to bring a general advance before long.

(On wharf.)

Bayos, per cttl.....	\$5.00 @ 5.15
Blackeyes	4.25 @ 4.35
Cranberry Beans	4.00 @ 4.25
Horse Beans	1.90 @ 2.15
Small Whites	4.75 @ 5.00
Large Whites	3.50 @ 3.60
Limas	5.00 @ 5.10
Pea	Nominal
Pink	3.00 @ 3.25
Red Kidneys	5.00 @ 5.15
Mexican Red	4.00 @ 4.15

SEEDS.

Prices on all lines are quoted as for some time past. There is little demand for any description at the moment.

Alfalfa	12 1/2 @ 15 c
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3 3/4 c
Canary	7 @ 7 1/2 c
Hemp	2 1/2 @ 3 c
Millet	2 1/2 @ 2 3/4 c
Timothy	7 1/2 @ 8 c
Yellow Mustard	Nominal

FLOUR.

Large shipments for the Orient are going out of northern ports, but there is very little export business here. The local trade is quiet, with prices unchanged.

Cal. Family Extras ...	\$5.60 @ 6.00
Bakers' Extras	4.65 @ 5.20
Superfine	3.90 @ 4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Business is a little more active than during the holiday season, with somewhat larger receipts, but both demand and supply locally are still very light, and dealers say there is no prospect of greater activity in the near future. The continued dullness has brought another drop in prices, as holders are showing increased anxiety to sell. Large offerings are reported in some sections at \$5 to \$6 below the summer quotations, and sellers are in evidence everywhere, with very little country demand. Local buyers are inclined to hold off in view of the weakness of the market.

Strictly fancy wheat and oat hay in light bales, however, is scarce and could be sold well above the appearing quotations. Ordinary alfalfa is plentiful and easy, but there is some movement in the country, and choice stock from the delta district brings very fair prices. Straw is scarce but dull.

No. 1 Wheat, or Wheat and Oats	\$13.50 @ 14.50
do No. 2	11.00 @ 13.00
Lower grades	9.00 @ 11.00
Tame Oats	11.00 @ 15.00
Wild Oats	9.00 @ 12.00
Alfalfa	8.00 @ 9.00
Stock Hay	7.00 @ 9.00
Straw, per bale.....	75 @ 95c

FEEDSTUFFS.

Everything in the feed line is quiet, with an easy tendency in prices. Coconut meal has been marked down, and rolled barley and cracked corn are both lower, corresponding with the weakness in the whole grain.

Alfalfa Meal, per ton....	\$18.00 @ 19.00
Bran, per ton	24.00 @ 25.00
Oilcake Meal	34.00 @ 35.00
Coconut Cake or Meal..	27.00 @ 28.00
Cracked Corn	41.00 @ 42.00
Middlings	33.00 @ 34.00
Rollod Barley	27.00 @ 28.00
Rollod Oats	31.00 @ 32.00
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

The general situation remains much as before, the principal feature being the absence of any large offerings of first-class stock. This is particularly true of southern vegetables, which now form a large part of the local supply, and in such lines there is an unusually wide range of prices. Most offerings of string beans will not bring over 6c, but a few fancy lots have been sold as high as 15c, while off stock is down to 3c. Even ordinary peas are higher, while good stock is held around 12 1/4c. Southern cucumbers also are higher, with a fair demand, while bell peppers are easy, and tomatoes have been marked down sharply, arrivals being in poor shape. Eggplant shows a sharp advance. Cauliflower is coming forward in better shape, and celery is also easier, while lettuce is comparatively cheap, with ample supplies. Mushrooms have advanced, as offerings have been curtailed the last few days.

Cabbage, per cttl.....	\$ 1.25 @ 1.50
Cauliflower, dozen	25 @ 40
Cucumbers, Southern, box.	1.25 @ 1.50
Green Peppers, lb.....	3 1/4 @ 4c
Carrots, per sack.....	50 @ 60c
Green Peas, Southern, lb.	4 @ 12 1/4
String Beans, lb.....	3 @ 15c
Tomatoes, Southern, crate	25 @ 65c
Eggplant, lb.	7 @ 10c
Sprouts, lb.	4 @ 6c
Celery, large, crate.....	1.25 @ 2.00
Rhubarb, box	1.00 @ 1.75
Lettuce, crate	50c @ 1.00
Mushrooms, lb.	8 @ 12c
Asparagus, lb.	Nominal

POTATOES, ONIONS, ETC.

Prices on all lines stand about as before, and the market has a decidedly firm appearance. Some dealers, however, attribute the high price of potatoes to speculative operations, and do not believe it is based on actual conditions, as there are large quantities not yet marketed. Northern onions are coming in freely, but prices tend upward in Oregon, and local stock is about cleaned up.

Potatoes:	
River Whites	\$ 1.00 @ 1.25
Sweet Potatoes, per cttl...	\$ 1.25 @ 1.60
Oregon Burbanks	1.20 @ 1.50

Onions: Yellow River, cttl.	3.00 @ 3.25
Oregon	3.25 @ 3.50
Garlic, per lb.....	7 @ 10c

Dairy Produce.

POULTRY.

Arrivals of old hens from the East have been rather large, but the offerings are well taken, and with light supplies from local points prices are well maintained on all lines of chickens. Ducks show a further advance, and choice live turkeys are higher. Dressed stock, however, is in very fair supply, and is quoted 1c lower.

Large Broilers	23 @ 24 c
Small Broilers, per lb....	27 @ 28 c
Fryers, per lb.....	20 @ 22 c
Hens, extra, per lb.....	19 @ 20 c
Hens, large, per lb.....	18 @ 20 c
Small Hens, per lb.....	18 @ 19 c
Old Roosters, per lb.....	14 @ 15 c
Young Roosters, per lb...	19 @ 20 c
Squabs, per doz.....	\$ 2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @ 23 c
do dressed, choice.....	25 @ 27 c

BUTTER.

Prices have been a little lower most of the week, but at the moment the market shows a somewhat firmer tone with a gain of 1c for the day and little surplus stock in any quarter.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras ... 27 1/2 27 1/2 27 1/2 27 1/2 27 1/2 28 1/2	
Firsts ... 27 27 26 1/2 26 1/2 26 1/2 27	

EGGS.

Prices have taken quite a sudden drop, with a material increase in supplies from most producing districts. Values, however, are still considerably higher than a year ago. Extras have gained a little in the last couple of days, as most offerings are pullets and firsts. Another lot of Chinese eggs is due from Seattle, but this has little effect on the better grades.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras ... 38 1/2 37 37 37 38 38	
Selected	
Pullets... 36 36 34 34 34 35 1/2	

CHEESE.

Flats and Y. A.'s have been moving off better this week, and both are higher, the latter showing a 2c gain. Monterey cheese, however, finds little demand, and is lower, notwithstanding light receipts.

Fancy California Flats, per lb...	18 c
New Young Americas, fancy....	17 1/2 c
Monterey Cheese	19 @ 20 c

Deciduous Fruits.

The demand for apples is hardly as strong as last week, and Newtown Pippins have been marked down to the old quotation, as very little stock will bring over \$1.75. Other lines are unchanged. Northern apples are in very fair supply, and are not as firmly held as a few weeks ago.

Apples: Spitzenbergs	\$ 1.25 @ 1.70
Greenings	1.00 @ 1.20
Bellefleur	1.15 @ 1.50
Newtown Pippins	1.40 @ 1.75

Dried Fruits.

The dried fruit market remains without much feature as far as the local trade is concerned. Quotations for evaporated apples, apricots, and pears are little more than nominal, as there is practically nothing left in growers' hands. The same is true of figs, for which some packers say 2 1/2 and 3c are about the top figures for any offerings that might appear of black and white figs, respectively. There are no definite values for these lines, however, and better prices may be in order if any active demand appears. There is little left in prunes except the smaller sizes, which can still be sold at the old prices, while any large counts ought to bring a premium. Peaches are described as dull and weak, though the recent concessions made in the East have brought forth some demand. Raisins are quiet, but the Associated company appears to have the situation well in hand. The New York Journal of Commerce says:

"In all lines except California raisins, the undertone is firm. In spot California prunes, particularly the larger sizes, the feeling is decidedly strong in sympathy with late advices from the Coast and the upward tend-

ency of prices here is increased by reports that Chicago holders generally have advanced their quotations a quarter of a cent a pound over their quotations of last week. Offerings from Coast packers are being more and more sparingly made, as the small stock in their hands diminishes under orders which, though comparatively small, are fairly numerous, and come from all parts of the country. Some packers in the Napa district who have been among the lowest sellers of late, are reported to be virtually sold out. While the f.o.b. market is strong and tending higher, no quotable advance is yet to be recorded. The situation in peaches is unchanged. Prices here and on the Coast are easy under a light demand, but well posted authorities are looking for a decided improvement as soon as the spring consuming season arrives. Apricots are scarce here, and Coast holdings are said to be reduced to a few hundred tons. However, there is little or no demand for goods in either position at present; prices do not quotably improve. California raisins get little attention from the local trade, and the market is dull with prices nominal."

Evap. Apples, 1913	6 1/2 @ 8 c
Apricots, 1913	10 @ 13 c
Figs: White	Nominal
Black	Nominal
Calimyrna	4 1/2 c
Prunes, 4-size basis	5 @ 6 c
Peaches	3 1/2 @ 4 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4 1/4 c
Seedless Sultanias	4 1/4 c

Citrus Fruits.

About 100 cars a day of oranges are going East from southern California, and the output would be larger were it not for the heavy rains in that section last week. Every effort is being made by the large shipping concerns to have the fruit handled as carefully as possible to avoid loss by decay in shipping. As the season goes along and plenty of moisture is in the ground, the chances for loss by frost becomes less, though there are some chances that the fruit will become puffy. The Eastern markets have been affected by extreme cold weather which has caused the lowering of prices both on oranges and lemons.

At the New York auction, held Monday, Jan. 19th, navels averaged from \$2.70 down to \$1.45 per box, while the Boston auction averaged a little higher. The Los Angeles auction on Monday sold six cars at prices averaging \$1.35, \$1.32 1/2, \$1.25, \$1.30, \$1.25 and \$1.07 1/2 f.o.b. California. The demand was good.

Shipments of oranges from the State since the beginning of the season up to Jan. 18th, were 8,039 cars, and of lemons 339 cars. To the same date last year shipments of oranges were 6,315 cars, and of lemons 735 cars.

No further change is noted in the San Francisco market this week, but there is every indication of weakness with some prospect of still lower prices following a decline at the principal primary points. The local demand for oranges is limited, and lemons are generally neglected, with few sales at the top figure.

Oranges: Navels	75c @ \$2.00
Tangerines, crate	75c @ 1.50
Mandarin	1.25 @ 1.50
Grapefruit, seedless	2.00 @ 3.00
Lemons	1.75 @ 3.50
Limes	3.50 @ 4.50

Nuts, Honey, Hops, Etc.

NUTS.

Prices are nominal for the most part with little desirable stock left anywhere and no urgent demand at the moment. Some of the poorer grade walnuts are said to be still held by southern associations, but the better stock is all cleaned up.

Almonds:	
Nonpareils	19 c
1 X L	18 1/4 c
Ne Plus Ultra	17 1/4 c
Drakes	15 1/4 c
Languedoc	15 1/4 c
Hardshells	7 c

Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Prices are quoted as before, but there is a rather easy feeling, as there is some stock which has been held here for some time and the trade is not buying.

Comb, white	15 @ 16 c
Amber	11 @ 12 c
Dark	9 @ 10 c
Extracted: White	8 @ 9 c
Amber	6½ @ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Prices stand nominally as before, with no demand worth mentioning and little on hand.

Light	30 @ 31 c
Dark	25 @ 29 c

HOPS.

Several transactions have been closed lately, both here and in Oregon, but the old range of prices will about cover the sales made. Reports indicate a firmer tendency, with some offers at a fractional advance, and some signs of a shortage in the East, but buyers are slow to raise their offers. Offers for 1914 hops are a little under the old quotations, but growers are not ready to accept.

1913 crop	20 @ 22 c
1914 crop	14 @ 16 c

Live Stock.

Stockmen in most districts are taking a rather firm view, and supplies of hogs and sheep have been light, causing a further advance in both lines. Dressed meats are unchanged.

Steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼ @ 6½c
No. 2	5¾ @ 6 c
Bulls and Stags	2½ @ 5 c
Calves: Light	7¾ @ 8 c
Medium	7¼ @ 7¾c
Heavy	6 @ 7 c
Hogs: Grain-fed, heavy	7¾ @ 8 c
150 to 250 lbs.	8½ @ 8¾c
100 to 150 lbs.	8¼ @ 8½c
Prime Wethers	5½ @ 5¾c
Ewes	4½ @ 4¾c
Lambs	6½ @ 6¾c

DRESSED MEATS.

Steers	12 @ 12½c
Heifers	11½ @ 12 c
Veal, large	11 @ 12 c
Small	13 @ 14 c
Mutton: Wethers	10 @ 11 c
Ewes	8½ @ 9½c
Suckling Lambs	13 @ 14 c
Dressed Hogs	13½ @ 14 c

HIDES.

The market remains steady as last quoted, with a very moderate demand and still lighter offerings.

Heavy Steers, over 56 lbs	15 c
Medium	14½c
Light Steers, under 48 lbs	14½c

Heavy Cows, over 50 lbs.	14½c
Light Cows, 30 to 50 lbs.	15½c
Kip	14½ @ 15½c
Veal	17½ @ 18½c
Calf	17½ @ 18½c

Dry—

Dry Hides	25½ @ 26½c
Dry Kip, 10 to 15	24½ @ 25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c

Horse Hides—

Salt: Large	\$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

WOOL.

While there is some buying in the East, no very urgent demand has appeared for California clips, and local buyers are taking no interest. There is not much of the fall clip left in the country, however, and more activity is expected as soon as the spring shearing is well started.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @ 10 c

HORSES.

This week's sale included a good-sized lot of horses from northern California, covering a wide range of weights and classes, with some attractive chunks and light drafters. The market, however, is not in very good shape, as many city horses of widely varying types and qualities are constantly being offered and tend to distract buyers' attention from the fresh stock arriving from the country.

Heavy drafters, 1700 lbs. and over	\$275 @ 325
Light Drafters, 1500 to 1650	225 @ 250
Chunks, 1350 to 1500	150 @ 200
Wagon Horses, 1250 to 1350	100 @ 150
Delivery Horses, 1050 to 1250	100 @ 125
Desirable Farm Mares	75 @ 100

MULES.

1200 lbs.	\$200 @ 250
1100 lbs.	150 @ 200
1000 lbs.	125 @ 175
900 lbs.	75 @ 125

PUBLISHER'S DEPARTMENT.

A STRONG ENDORSEMENT.

The following letter to Prof. Wickson from W. S. Guilford, head farmer and agriculturist for the Kuhn Irrigated Land Co., himself an author of a book on potato growing, contains the kind of endorsements that our new book, "One Thousand Questions in California Agriculture Answered," is receiving. We print this letter because Mr. Guilford is so well known as a practical, up-to-the-minute agriculturist, that our readers may get an idea of others opinion of this book:

Orland, Cal., Jan. 15, 1914.

Dear Prof. Wickson:

I am delighted with your new book. It is a most valuable addition to California's agricultural literature and should be in the hands of every farmer in the State. There is no way to estimate the great saving, both in money and satisfaction, that would be effected if every new settler in California could have this book and "California Fruits" and "California Vegetables" before he buys or settles on a California farm. Congratulations and best wishes. Sincerely,

W. S. GUILFORD.

This new book of "One Thousand Questions Answered" is meeting with great success. It has been out but a few weeks, has not been pushed through the usual channels of trade, still the sales are very flattering. Every day we are sending out dozens of copies. When the great value of the book becomes better known, every farmer in the State will want to own a copy. Every subscriber to the PACIFIC RURAL PRESS should get a copy at once. Take our word for it—it's worth many times its cost to you. Send for our special subscription offer in connection with this book.

Speaking of book sales reminds us of the fact that the sixth edition of "California Fruits" is nearly exhausted. At the rate these books are selling, we will have none left by March 1st, and we would urge those who have thought of getting a copy not

43 Years of Leadership

SINCE 1870 the PACIFIC RURAL PRESS has been the leading agricultural and horticultural journal of California. It is conceded to be one of the best edited and printed farm papers in the country. It has, we believe, the largest and best paid circulation of any farm weekly on this Coast. During its 43 years of life it has done much to help in the development of agricultural interests in this vicinity. It is the favorite farm paper of the best farmers and the favorite advertising medium of those who cater to the farmer's wants.

Read what some of the leading nurserymen say about it:

The Pacific Rural Press.

Fresno, California, Jan. 1, 1914.

Gentlemen—It gives us pleasure to congratulate you on the good work being done by your paper, particularly in the Editorial Department. The Pacific Rural Press has long been regarded by us as the best horticultural journal in the West.

The advertising space we have used in your paper has always given us good results. Yours very truly,

KIRKMAN NURSERY CO.
By Wm. T. Kirkman, Jr.

Pacific Rural Press.

Los Angeles, Cal., Jan. 6, 1914

Gentlemen—We are receiving more responses to our ad. in your paper this year than ever before, which would indicate that you are increasing your circulation among those interested in our line. We also wish to state that the inquiries coming from your people are nearly all good live inquiries and would indicate that the parties mean business.

Yours very truly,
THE ROEDING & WOOD NURSERY CO.
By W. R. Wood.

Pacific Rural Press.

Chico, California, Jan. 2, 1914.

Gentlemen—We have your favor of the 31st, and in reply will state that in our line we get better results from advertising in the Pacific Rural Press than in any other publication that we use.

Yours very truly,
CHICO NURSERY CO.
By E. Wightman.

Pacific Rural Press.

Fresno, California, Jan. 1, 1914.

Gentlemen—We are well pleased with results obtained through the medium of our advertisements in the Pacific Rural Press. It is one of the first papers on our list when we place our advertising for the season.

We consider your paper very ably edited, nicely gotten up and arranged, dealing at all times with up-to-date fruit growing facts and conditions. We wish you all kinds of success for 1914. Yours truly,
THE FRESNO NURSERY CO., INC.,
By Chas. A. Chambers, Sec'y-Treas.

Pacific Rural Press.

Fresno, California, Jan. 8, 1914.

Gentlemen—Your valued favor of the 30th ult. received. It is hardly necessary for us to tell you that we have always been friendly disposed toward the Rural Press. This has been indicated by the amount of advertising that we have placed in your paper. We are very much pleased to say that in recent years we have noted a decided improvement in the efforts of the Press to get in close touch with the horticulturists and agriculturists of California. Under the present management the paper has made many improvements, not only in the general appearance of the sheet, but in gathering valuable data which we are quite sure is appreciated by all of your readers.

It is not necessary to comment upon Prof. Wickson's work, because that has always been up to the standard; but it is a pleasure to note that he is so ably assisted in getting out this publication in so much better shape than former years.

We have already noted quite a little improvement in the returns that we are getting from our advertising, and in view of the enterprise your people are exercising in the entire make-up of the paper we expect to have better returns this year than ever before. With kindest regards, we beg to remain,

Yours very truly,
FANCHER CREEK NURSERY CO.
By Geo. C. Roeding.

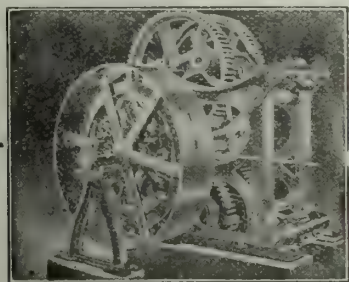
The PACIFIC RURAL PRESS can help you dispose of your nursery stock this season. Write us at once.

Address, Advertising Dept.

Pacific Rural Press

420 Market Street

San Francisco, Cal.



POMONA DEEP WELL PUMPS

We make a specialty of building pumps for raising water from deep wells for farm or irrigation purposes. We also make orchard valves, gates, etc.

Write for New Catalog No. 54 P.

POMONA
Manufacturing Co.
Pomona, Calif.

or Pease-Bundy-Taylor Co., Porterville, Cal., agents for San Joaquin Valley.

GOPHERS.

SWEET POTATO CULLS FOR

A Kansas farmer says that he can keep down gophers by feeding them sweet potato culls doctored with strychnine. After practicing this plan for exterminating the pest for three or four years he finds very little trouble in keeping them out. All the sweet potato culls are saved at digging time to be used later as gopher bait. The potatoes are plugged as you would plug a watermelon. A grain or two of the poison put in the cavity on the point of a penknife. Then the plug is replaced and pinned down with a piece of toothpick. After preparing a quantity of this bait the field operations begin.

Two men working together can go over a field in a very short time.

to put off their order. How soon another edition will be issued we cannot say. Prof. Wickson is a busy man, and to revise the book is one big job, which will take time, and this revision will be made before the seventh edition is printed.

In another column will be noticed the announcement of the Jersey Farm Dairy at San Bruno. This is one of the oldest dairies in the bay district and has been bred up for the past 17 years through the use of pure-bred Holstein sires. It seems to us that this is an exceptionally good opportunity for those dairymen who are short on stock, as the whole herd is to be sold and no reserve is made, as is very often the case at other sales. From present indications, alfalfa will be cheap this summer unless the growers feed it out to dairy cows, and we repeat again that we do not believe such an opportunity of purchasing large numbers of good stock will again be offered this spring.



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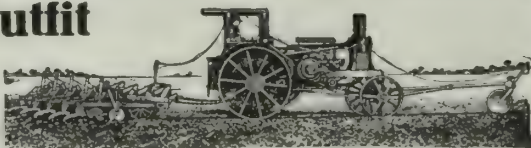
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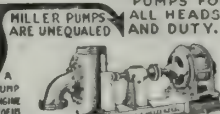
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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 5.

SAN FRANCISCO, SATURDAY, JANUARY 31, 1914.

Forty-Fourth

Success of the Raisin Company.

[Written for the PACIFIC RURAL PRESS.]

In the news notes of the issue of January 17, a summary was made of the progress of the California Associated Raisin Company in moving the crop. From the standpoint of results, the Company has apparently held up its end, and a little examination of finances would show pretty accurately whether the growers had come out all right or not. It would seem that the Company had obtained all for the raisins that the growers would have had under the old conditions and paid for its capital besides.

This figuring is as follows: The crop of 1913 is estimated at approximately 65,000 tons, or 130,000,000 pounds. The Company contracted for nearly all of this at $3\frac{1}{4}$ cents per pound, but with

previous years the raisin men have had to sell what they could, perhaps hanging on to their goods until the following summer. In this season they delivered the goods and received either the cash or notes which could be used for cash.

This achievement was well worth considering, for with only a capital of \$1,000,000, and much of that only notes, the Company, against the strong opposition of the packers that formerly handled the trade, carried nearly the whole crop of 65,000 tons, worth \$45,000,000, at a time when money was very tight and the banks giving very little support. During the height of the season, \$100,000 per day was being paid out, or one-tenth of the whole capital. It started the season untried and against opposition from nearly every side except the public as represented by growers and others in sympathy. It will start the next season, according to present indications, with the opposition so demoralized that it can do nothing.



In a Fresno Vineyard—Pruning for High-Stake Training of Vines.

the agreement that if the price went up, the growers would get the advantage, an amount being kept out to pay necessary expenses and fair profits. This, it would appear, will give the growers about 4 cents per pound. Under the old conditions it can only be guessed what the growers would have received, but judging from the size of the crop and holdover, state of the market, etc., $2\frac{1}{2}$ cents per pound is a fair estimate. This gives growers a full $1\frac{1}{2}$ cents more than they would have received, which makes \$1,950,000 more than would otherwise have come to California. This is stricter figuring than easily could have been done, and nearly pays the capitalization twice over. In other words, the growers have received all the money they would have received anyway, plus a good margin, and have paid for the capitalization of the Company. What is more, the larger part of the capital of the Company was credit, simply promises to pay for stock, growers usually not paying out money until after they had received it from the operations of the organization. Aside entirely from the mere fact of getting more per pound is the fact that there was no bother about selling the raisins. In

no more disapproval than any organization is quite sure to find, with the trade in its hands, and so much of the crop contracted for that sailing will be easy.

There are perhaps weak places and conditions that should be remedied, as is the case with every new business, and most that are not new, but improvement can only come by degrees. On the other hand, lessened costs in buying, seeding and handling, more than make up for any disadvantages which would leave much room for competition.

Under old conditions, raisins were produced either at a loss or on a small margin of profit. Many vineyards were being rooted up and put into alfalfa. Success is causing increased planting, better care of the vineyards, will increase production and quality, and by increasing production it will be better for wholesaler, retailer, and general public.

How the Raisin Growers' Organization Arrived.—Now that notable results have been attained, it will be interesting to have a review

(Continued on Page 137.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Jan. 27, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka.....	.....	.....	23.51	...	...
Red Bluff.....	2.96	24.27	13.57	58	38
Sacramento..	2.74	15.18	10.29	58	44
S. Francisco.	3.03	21.82	12.06	60	46
San Jose.....	2.10	13.50	9.78	62	42
Fresno.....	2.58	8.52	4.97	64	42
Independ'ce ..	.....	.....	4.91	...	...
San L. Obispo	9.10	26.11	9.87	60	46
Los Angeles..	5.69	14.93	7.52	62	44
San Diego.....	2.64	6.57	4.89	62	44

The Week.

As we write on Tuesday the sun is bright, there is a cool breeze from the northwest playing over the bay region, if it were not for the dark forms of weather prophets hovering in the horizon we should rejoice that the too heavy and persistent storms were over and that we might expect a week, perhaps a month, for field work and for repairing injuries which too great rush of waters has wrought. But we are become unsure of anything. The prophets are keeping up such a hullabaloo that even old fashioned thunder and lightning seem to be a sort of phonographic picture show. Father Ricard, whose working hypothesis has received wonderful support in the popular mind, instead of stating and re-stating his position in a dignified manner, as occasion may require, breaks out in satirical denunciations which edify no one—that is, if words attributed to him in the common prints are authorized. On the other hand, other sun-observers are impeaching his hypothesis by claiming that the period of its application is one of scant sunspots, with the inference that if present sun spots make such storms, destruction would surely come when the face of the sun really gets busy. This is a question of fact which should be calmly considered. As we have had so much to say about spots, it is fitting that our readers should have a statement which can hardly be questioned. Dr. George Ellery Hale, who was once director of the Yerkes observatory, and is now director of the Mount Wilson Carnegie Institute observatory, coincides with Dr. Campbell of Lick observatory in his views of sun-spot meteorology. Dr. Hale further says:

"We are now passing through a period of remarkably low solar activity, in which weeks frequently pass without a single spot appearing on the sun. Those which have appeared, at

rare intervals, during the past two years have been of insignificant size. The sunspot of last December, described by some observers as of great importance, was very small indeed when compared with the enormous spots commonly seen on the sun during times of great solar activity. Furthermore, our daily record with the spectro-heliograph of the invisible phenomena of the solar atmosphere testifies to a similar condition of comparative calm.

"If the minor solar disturbances of the past few weeks are capable of affecting our weather conditions appreciably, the very large sunspots which may be expected within the next few years should produce far greater effects. It will therefore be wise to accept no system of weather forecasting based upon sunspot observations until it has been tested during both maximum and minimum periods of solar activity."

It is too much to think that the sun can conceal his wounded side from the observers at Mount Wilson and Mount Hamilton and disclose it at Santa Clara. If, however, Father Ricard has really found anything he can well afford to work and to wait for demonstration—changing, meantime, his style of discussion.

Electrical Weather-Making.

As it may be some time before we shall find occasion to indulge in weather-talk again, and as the ground is now too wet for anything else, we recall the fact that last week the electrical engineers, envious of the astronomers' publicity in weather matters, butted in on their own account. The cable says that Sir Oliver Lodge, principal of Birmingham University, in an address before the Institute of Electrical Engineers, suggested the possibility of obtaining some measure of control over the weather. If clearing weather, he said, were due to electricity, it might be man could acquire some control over the electrification of the atmosphere. If it were desired to produce rain, why not send up a kite to reach the clouds? He believed that if enough electricity were discharged into the clouds the drops would behave there as they did in the laboratory; they would coalesce, and once that had happened, the process might be repeated and cause a shower. When rain was wanted, the lecturer said, negative electricity should be sent up, and if fine weather is wanted, positive electricity.

We do not see exactly how you could do all that, but that does not matter; we do not know any more about electricity than we do about sun spots. We only know that when a trolley car is running along all right on one kind of electricity, another kind sometimes breaks in and nearly thumps the top off the car. And, then, what would happen to you if you were hard at work pumping three thousand volts into a cloud and, just as you caught on, the cloud should set free on your wire about three million volts of another kind which it was anxious to get rid of? Again, just at the time when you want rain the most, there aren't any clouds to send your kite into, and suppose you go on spraying negative electricity into a clear sky and make a lot of clouds and set them to raining on your garden patch, what's to prevent your neighbor from shooting something positive into you for making it rain on his hay? On the whole, our advice to the electricians is to keep out of this fight; sun spots are about as hot a thing as it is safe for the public to play with.

When Will the Money Be Ready?

We seem to be up against it, good and proper. We have been preaching cheaper money for farming for a long time, and one reader, at least, seems to think it is about time we were coming through with it. He is evidently inclined to say that we had better put up or shut up—though he cannot quite bring himself to be so unkind. We are hopeful that the following was written with honest intent and not merely to see us squirm:

To the Editor: I wish to borrow money for improving my ranch and putting up buildings. Where would you recommend me to apply? Is there yet any arrangement for cheap loans to farmers?—Reader, Glenn county.

So far as we know, there is no money yet except the same old money in the same bad old way, from readily recognized dealers therein. We call it a bad old way with no reflection on the dealer, for he has an undoubted right to sell the use of his commodity at the best price he can get for it; but it is a bad old way from the point of view of the borrower and of the public because it makes the margin of profit so small that careful people are slow to borrow money for such an improvement as you desire to make and which, in the public interest and your own, ought to be made. We are quite sure that there will be improvement and that the bad old way will become better slowly, because bankers themselves admit that money for agricultural development ought to be shorter in interest and longer in terms. They keep saying at their conventions that they wish to promote farming development and prosperity, and they are honest about it. They also say that they can do something in that line, and we believe they will, but that they will do enough and do it soon enough, so that farmers can safely leave the whole matter to them, we do not believe. Ample money for farming has never been attained that way. The money which has helped farming in Europe and which has attracted such wide attention in this country, is not money provided by old-line money dealers out of the currently visible supplies. The money which has promoted farming improvements and development, in countries where most notable things have been achieved in these lines, has been gathered from invisible supplies and when it became visible it made old supplies jump around—as the dead frog did when Luigi Galvani touched it with the current which now bears his distinguished name. Although we are expecting more for agriculture from all old lines of money handling, we do not expect them to do their best until they become electrified by financial currents from sources which are now invisible. Of course we cannot tell in what place nor at what time such currents will first manifest themselves. Therefore the only suggestion we have of immediate service to our correspondent is to make to himself friends of the existing mammon of financial unrighteousness and get the best terms they have to offer him on such a loan as his improvements require.

Whence Will the Money Come?

Financially at least, we are homeopathist. We believe that the only thing which can cure the ills of money is more money. Control of supplies of money enables one to raise the price for the use of money—just as it is with spuds or any other commodity which people insist on having. Of course we do not believe that any

advantage can come from a lot of near-money—those who dream along that line waste their time. It must be real money, money the world over—not a lot of shells, or what not, which may at one time have held perfectly good clams of some value, but now carry nothing but tribal fiat. Real money is the only thing which can act as a counter irritant on real money which is swollen from internal inflammation. Now, whence will such money come?

We believe that in this country this relieving money will come from all directions except downward. In Europe, truly, it has come from above as well as from below and from all sides, but that from above is least in amount and least valuable in effects. It is really the money which has welled up from the unsuspected savings of farmers and the money which has poured in from those who desired to make investments on the best of all securities (the value of good productive land and the character of thrifty and honest producing farmers), which has so generously financed European agriculture at such exceedingly small rate of interest and such favorable length of term. It is all real money, and it became visible in such quantities that it put to shame the old lines of handling money by what are called commercial loans—and practically put an end to them from an agricultural point of view. Now what we shall have from above in this country will probably be determined by Congress this winter. We expect it will be, in the main, the authorization of organizations, which may be called "land banks" or "agricultural banks," to operate under national regulations and supervision and to be practically approved by the government by being constituted depositaries for certain public funds. We have no idea that any scheme for government endowment of agriculture will get anywhere in Congress or in the public mind. This issue is not to secure special privilege; it is to get fair financing and prevention of special privileges to other interests. Under such a system, then, whence will money come?

First: from the accumulations of farmers themselves in their organizations—the capitalization of their own agencies for production and distribution. Some time ago we urged the beginning of reserve funds by societies for loans to their own members, and, of course, corporation under laws regulating such business—securing new laws to cover it if such are needed. The life and influence of a farmers' organization will be directly proportional to the money it has in its corporate or co-operative purse.

Second: from depositors and investors of all kinds who esteem first of all security and who cannot be trapped by insecurity, though it offer extravagant interest rates.

No one has any idea of the money which is not visible even to bankers. A large bank may measure a few cords of gold which it has from its depositors. It does not know how much more there is in its safe-deposit boxes. No one knows how much money there is in old stockings under the bricks of the fireplace, or in old iron pots under the tall weeds in the garden-corner. We may not have as much invisible and idle money in this country as they had in Europe, where uncounted masses of it were brought to light and to use by the exhortations and demonstrations of agricultural banking, which gave people confidence in the purposes and character of it. Banks have come to be

loved and trusted instead of suspected and feared. If we get to that state of mind in this country, money will come out of hiding; it will flow from older to newer parts of the country for secure investments; it will freely cross oceans seeking reasonable employment. The visible and available capital will be increased as such employment is opened by organization and law. Then it will appear that the cure for the tyranny of money is more money—not through creative act, but through creative opportunity.

Why Not More Help to Backward States?

This question is not directly connected with the foregoing, but it is suggested by it. It seems as though those States which need help in financing their agriculture are agitating most keenly for it. That seems to us right enough. Their necessities may make them examples for other States; through their achievements they may disclose necessities elsewhere. The States which are doing most to help themselves by embodying European precedents are the Southern States, and they should be encouraged. For this reason we are not at all in sympathy with the contention of Senator Cummins of Iowa that the division of federal funds for agricultural enlightenment should not be equally made among the States. Senator Cummins says that 12 Southern States which produce about three billions worth of agricultural products will get nearly 40 per cent of the fund, while the 12 leading agricultural States of the North, producing more than six billions annually, will get only 36 per cent. Senator Cummins will insist that the fund be distributed on the basis of persons engaged in agriculture or on the basis of agricultural production. We would prefer the distribution to be proportional to need, and fortunately the old rule of equality among the States divides this money for agricultural education according to need, as Senator Cummins' figures show.

Queries and Replies.

Querists must submit full names and addresses.

Can Almonds Come Back?

To the Editor: I would like your opinion as to whether 14-year-old almond trees on good almond soil, which have not been properly pruned, cultivated, or sprayed for a number of years, can by proper attention be brought back to profitable bearing? Last year the red spider attacked them and they lost all their leaves. Is it probable there will be any crop the coming season?—B. C., Sutter.

We see many old almonds which we would make firewood of, but a 14-year-old tree in good soil should come back with proper tillage, pruning and protection from pests. The coming year's crop should be put out of sight. The trees should be considerably cut back, winter sprayed with lime-sulphur to clean the bark, etc., and then a good watch kept for red spider, and the foliage kept active all during the coming growing season. The behavior of the trees next summer with plenty of moisture and good cultivation will show you whether they need fertilization also, the next winter—which probably will be a benefit.

A Pampered Apple Tree.

To the Editor: I have a young apple tree, six years old, that has not come into bearing yet. I am afraid it is self-sterile or that I

have fertilized it too much, causing a great amount of wood growth. How may I deal with it to get it to blossom? Will cutting the roots off, from 3 to 4 feet from the trunk, help it any? Had I better not cut the top of limbs off any more? It is the "Black Twig" variety.—D., Grass Valley.

Your young apple tree will come into bearing if you stop the fertilizing and allow it to go unpruned this year also; reducing this summer's wood growth somewhat by irrigating less or cultivating less during the current summer than you have been in the habit of doing. Root pruning would have the same effect, but probably the other repressive treatment will be enough.

Walnuts in the San Joaquin.

To the Editor: What do you think of walnut planting in the valley? I am 4 miles from Fresno in the flat valley. Especially, will the nuts withstand this temperature and the tree make a good growth? If so, what varieties are best for this locality? Would hardpan land be adaptable, providing the hardpan was blasted through and well shaken up? There are no commercial plantings that I can find around here, although I have found a few isolated trees that are thrifty, and the owners claim they get good nuts; but I do not know whether they are good commercially.—C., Fresno.

You will find a straightforward article by Edwin Gower, of Fowler, in our issue of November 1, 1913, which answers most of your questions. Our observation is that on soils sufficiently deep and free from alkali, the walnut will be very satisfactory in your valley, if it is grown upon the California black walnut root. It is also important to choose varieties like the Franquette and Mayette, which seem to be less liable to sunburn. If you mean by hardpan, land which has a thin layer of hardpan which can be disposed of by digging through or blasting, with a good soil beneath it, there is little question that it is suitable for walnut growing. We refer to the land which is giving very good success in peach growing after breaking up the hardpan. But if it is alkali hardpan or heavy soil impenetrable to a considerable depth, we should avoid it.

Fruit Brandies, Etc.

To the Editor: Would it not be profitable to establish a concern to make cider and wine and to distill all kinds of fruit brandies? What regulations of the Government have to be complied with?—N. S., Eureka.

The establishment of a distillery to manufacture all kinds of fruit brandies would require so much capital and would have to be so carefully located in order to be sure of a satisfactory supply of fruits that the undertaking would be hazardous. Cider and wine, which do not require distillation, can be made without reference to the revenue department, but whenever you distill anything, you must make registration. You can get information about the manufacture of denatured alcohol from various waste products by writing to the Division of Chemistry, U. S. Department of Agriculture, Washington, D. C. It is very hard, to say the least of it, to make it cheap enough to be profitable.

Myrobalan.

To the Editor: Will you kindly, in your paper, give correct pronunciation of myrobalan (plum)? Many pronounce it my-ra-bo-lan; others say my-rob'a-lan.—Grower, Wrights.

The "others" are right: both in spelling and pronunciation.

The California Dried Peach Perplexity.

To the Editor: At the request of the PACIFIC RURAL PRESS, the writer is constrained to give a few suggestions concerning the California dried peach, which might become of interest as well as value to producer, tradesman and consumer alike.

That the present market condition for dried peaches is in a peculiar state must be apparent to anyone who has given the subject any thought whatever. For instance, that any food product should have to be produced and marketed for two consecutive years at less than the cost of production, indicates under the circumstances something radically wrong. If both years had witnessed an excessive crop, that is, a supply beyond a normal demand, the low prices might be accounted for, but such is not the case, for while the 1912 crop was a good full crop the 1913 crop was only about 60% of a crop, and therefore by all the laws of "supply and demand," the 1913 market should have advanced until the prices were above the cost of production. A few years ago, with crop of like quantity, the grower was able to secure from 8 to 10c a pound for his product, whereas now, with increased labor expense and increased taxes, as well as increased cost of living, the grower is compelled to sell his product at from 3½c to 5c a pound, when it costs 5c, and in some cases, 6c to produce.

Undoubtedly the agitation of sulphuring of dried peaches has had something to do with the present depression; it is however equally certain that speculation in marketing has had much to do with it.

In 1912 some of the peach crop was sold by Coast speculators to wholesalers in the East and South as early as February at very low prices for fall delivery, and this before the buds on the trees had even begun to swell. The presence, of such low priced peaches in the hands of wholesalers during the fall prevented other wholesalers from paying what the market warranted they should pay. This tended to force down the price which might be tendered to the producer in California.

When the consumer wants dried peaches and his grocer does not have them, but offers him prunes or raisins or dried apples or something else, while the peaches are left in the hands of the grower in California, it becomes at once apparent that the producers of dried peaches suffer. It is also evident that the consumer becomes dissatisfied because he has to take what he does not want, and in the long run this cuts off trade from the dealer; hence all suffer. So much for conditions.

THE QUESTION NOW IS FOR A REMEDY. —Some years ago, Mr. J. A. Filcher, in the employ of various interests, visited Europe and made an exhibit of our dried fruits with other products in various market centers. Mr. Filcher induced one dealer in Hamburg to place an order for ten tons of California dried peaches, though the dealer had some doubts about being able to dispose of them. We are informed that he not only disposed of all of them, but within a few days after their arrival in Europe, he placed an order for ten cars, and this was later followed by a still larger

order. Representatives from various large markets in Europe, who visited Mr. Filcher, saw his exhibit and the quality of California dried peaches, and urged that he bring his exhibit to other cities and that they would help to maintain the expense of the same, but this was not possible at the time, because sufficient aid was not behind Mr. Filcher from California.

Not many years ago we were importing prunes from Europe; now half the California production of prunes is sent to Europe. Europe buys most of our apricots and there is no reason why, with the reasonable price on dried peaches, that Europe should not be taking great quantities, and no doubt will when the matter is brought to the attention of the Trade over there. It would seem as though there is opportunity for producers, tradesmen, Chambers of Commerce and the California Legislature, together, to develop a market that would eventually bring untold millions of dollars annually into California from Europe.

REMOVING THE FUZZY COAT.—Another point that might afford occasion for increasing consumption of dried peaches is that many people do not seem to know that the fuzzy coat on dried peaches, which is so objectionable to some people, can easily be removed by the housewife in preparation of dried peaches for cooking. If the fruit is placed in cold water and let stand for 30 or 40 minutes, and then thoroughly rubbed and washed and kneaded with the hands, the fuzzy peach peeling will all be loosened and may then be easily washed off, leaving the peaches entirely free from such peeling, and then when cooked they will produce a very striking rich flavor; much richer in fact than any canned peach and something that will appeal immensely to the palate of any epicure. It is not only for consumption among those who are epicures, but should be appreciated greatly by the middle class who are forced for the sake of economy to use dried fruits.

We learn of many peach orchards in the Fresno section being uprooted; we also learn of many promising two and three year old peach orchards in the north end of the Sacramento Valley being pulled up, all because of the present market conditions. Unless the growers will get together and act unitedly in this matter for their own protection, many more will be removed; but if growers will get together and act with judgment and foresight, not only can they avoid destroying their orchards, but room can be made in the markets for the products of thousands upon thousands of acres of peach orchards in the future where vacant or grain or pasture land is now in evidence. Action certainly is necessary. J. P. DARGITZ, Sacramento, Cal., January 16, 1914.

[This is surely right to the point. Why peach growers will pull up peaches instead of pulling themselves together, is hard to understand. In some things our fruit growers do not have common child sense. If there is a bad boy in the next block, what do the kids do? Don't they bunch up and whale the stuffin' out of him? A situation can be changed in the same way. Now, therefore: Fall in, peach-

growers! Right dress! Front Forward, guide right. MARCH!

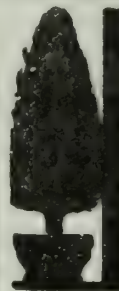
And as the troops are moving, General Dargitz, will you kindly disclose the plan of the campaign?—EDITOR.]

CITRUS AND OLIVES IN LAKE COUNTY.

To the Editor: I would like to know what would be the best varieties of orange, lemons and olives for this climate, or do you think they would do much? I want them for ornamental trees.—A. N. S., Upper Lake.

[It is a number of years since we have looked about in Lake county, and

I do not know how the trees, which we then saw, have fared. There have been many semi-tropical trees planted on the older places around Clear Lake and the way to find out what you should plant is to look and inquire about earlier plantings and choose the survivors for your own use. Perhaps the most ornamental orange in foliage, bloom and fruit is the Seville or bitter orange. It is what is called the "sour stock" in our citrus propagation and it is quite hardy. The fruit is so bitter that even a hobo will never try a second one. For lemons we should try a Villa Franca and for olives, the Mission.—EDITOR.]



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Bud Selection in Citrus Fruits.

The work that has been done in California citrus groves the last three or four years, largely under the direction of A. D. Shamel of the U. S. Department of Agriculture, in following out the bud variation of citrus varieties, and the possibilities of obtaining much heavier production and a superior quality of fruit, has attracted attention all over the country. It has apparently been clearly demonstrated that greater productivity by bud selection can be readily obtained, also the quality vastly improved; further that indiscriminate bud selection can very readily mean much poorer yields and inferior fruit, in fact, the chances are strongly in that direction.

This subject is one of the greatest developed in recent years in the citrus industry, or in horticulture of any kind for that matter, and is somewhat related to the matter of wild wood and pruning methods discussed in our issue of January 17. Although the possibilities of progress by bud selection were early realized, each season has given more light on the matter and added something of interest and the work will continue for several years yet. We have said a good deal on the subject at various times, but it can bear repetition, and includes certain phases of the subject recently developed.

Besides showing the yielding habits of individual trees under similar conditions, the final records will also determine the character and frequency of bud variation, and, whether this character can be perpetuated in future generations, and the practical methods of improving the yield and quality of both new and old orchards.

WORKING METHODS.—The orchards chosen for this study are uniform in character. The trees are of even size, and were so from the nursery. They are free from pest or disease and have received little or no fertilizer. Each individual tree is numbered with white paint on the trunk. The fruit from each is graded separately and weighed and counted and recorded. This involves a great amount of care and detailed work. With lemons there are several pickings in a year, but each picking is handled as stated. They have found a tremendous variation in both yield and quality of fruit.

In 1910, one navel tree yielded 14 fruits, weight 16 pounds 15 ounces. Another tree yielded 541 fruits, weight, 233 pounds, 9 ounces. Another tree yielded 816 fruits, weight 432 pounds. These three trees were extremes, but typical examples from a uniform plant. They were apparently of same size and condition of health and scattered in the grove.

These records show also that the trees which yielded most fruit also yielded the largest percentage of fancy fruit. The best trees of 1910 were also best in 1911 and 1912. This important fact in contrary to the general belief, that a large yield one season would alternate with a smaller yield the next.

YIELD AND QUALITY.—If we divide the trees into three classes the record for the whole navel grove under study shows:

Class 1, yielding about 432 pounds of fruit—10 per cent.

Class 2, yielding about 236 pounds of fruit—75 per cent.

Class 3, yielding about 50 pounds of fruit—15 per cent.

The above classification based on 100 trees would yield:

10 trees at 432 pounds.... 4,320 lbs.
75 trees at 236 pounds.....17,700 lbs.
15 trees at 50 pounds..... 750 lbs.

Total 22,770 lbs.
Comp. with 100 trees at 432 lbs.
43,200 lbs.

Total 20,430 lbs.

which means that if all the trees of the orchard averaged with the 10 per cent best the yield would be nearly doubled.

In Marsh seedless grape fruit plot a similar condition existed. Of 500 trees, 24 per cent were unproductive, some bearing fruits containing 96 seeds, while others produced coarse, thick-skinned, flavorless, juiceless fruits.

Besides this off type, there was found a standard type producing good crops every alternate year. Again there were found in a plot of 25 Marsh seedless grapefruit trees three that bore for three consecutive seasons large crops of the finest quality of fruit and no off types at any time.

LEMON RESULTS.—The Eureka lemon study also showed wide variations. One, which we will call the standard type, is marvelously productive, every branch carries a full load of bloom and large and small fruits in all stages of development at all times of the year.

Another type, very large and thrifty, was nearly fruitless, and a third type with a very compact habit of growth and dense foliage, was found on close inspection to be almost barren.

One cooperative grower gives the following data for two large lemon trees for three years: Tree No. 2, yearly average 768 lbs. at 2c. \$15.36; tree No. 4, yearly average, 443 lbs. at 2c. \$8.86.

If 70 of the poor trees were equal to the best, the gain would be \$455 to the acre (counting 72 trees per acre).

One experimenter for some years has been propagating a number of variations in true nursery form—that is, the bud is inserted near the ground so that the whole trunk and branches will represent the parent type. The original parent trees in each case are known and marked, and it still remains to be seen whether the progeny will come true or not.

There are many cases in California where the stock of certain orchards is known to have come from certain other orchards, but in no case that the writer knows can a particular strain or line of trees be shown as coming from a single tree or definitely known source.

REPRODUCE TRUE TO TYPE.—The first discovery, made in 1908, was a single limb (perhaps one-sixth of the whole tree) bearing heavily of 150 sizes with never a cull, and the fruit of smooth oval shape with a small pin-head navel showing a minimum of waste pulp. Buds were taken at once, and 60 trees from this known source are bearing. A careful watch in the meantime showed that the parent limb maintained its prolific habit and characteristics first noted. The freeze of January 1913, demonstrated that 56 of these 60 trees were more tender than the average navel of same age in the same orchard, involving all told about 500 trees. The four remaining proved to be fully as hardy as the hardest navel of same age, and propagation be-

gan this fall from these four trees. Over 1000 trees, the progeny of the 60 trees, have been discarded as too tender to continue.

In another orchard of 25 acres of 18-year-old trees, two trees were discovered and known to have a 9-year annual record of 12 to 16 field boxes. The orchard averaged eight field boxes per tree. It is to be regretted that this record could not have been kept along the scientific lines laid out by Mr. Shamel. But the producing power of these two trees was noted in field boxes by the foreman and found to exceed the average of the orchard by over 50 per cent.

However, stock is being propagated from these parent trees. The first crop is still two years in the future. The frost of last January proved them to be quite as hardy as the average.

On the O'Tool place in Crafton, a very prolific navel tree was discovered. The fruit was small sized—about 200s or smaller—but seemingly as many in number as the leaves of the tree. This stock is being tried on different roots to try and retain its prolixity and increase the size.

GOOD BUD WOOD SCARCE.—In all these cases cited, bud wood has been found very scarce. The marvelous productive power of each was characteristic. Every eye or bud formed easily and quickly into a fruit spur, and only by careful watching were any buds obtainable. Mr. Shamel has found that unproductive types are characterized by much long wood and foliage. Buds

are easily obtained from the so-called Australian type at any time of year, and its shy bearing habits are well known.

So far as records go it may be concluded:

I—That there is a much larger extent of bud variation in all citrus fruits than is apparent to the eye. Only by keeping the recorded performance of individual trees can the extent or importance of this variation be determined.

II—That from 25 to 50 per cent of the trees in our orchards are off-type and undesirable, and that 10 per cent would include the best type free from undesirable variation. This 10 per cent alone is worthy of propagation.

III—That the trees which produce the largest quantity of fruit also produce the best quality. The replacing of off-types by standard or best types means not only increased production, but also improved grades of fruit.

Two recommendations naturally follow:

(1) That all orchardists keep individual tree records and gradually work over the poorer types to the better.

(2) That some system of inspection be established so that all nurserymen will be required to obtain buds only from trees of known bearing habits.

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Alfalfa and Fruit Varieties.

[Written for the PACIFIC RURAL PRESS.]

The proposition of growing alfalfa in the orchard is meeting with lots of favor in California, perhaps too much favor, because sometimes there is a hitch in the proceedings and more trouble than good results. This was brought out in a discussion at the Fruit Growers' Convention at San Jose, following a formal address on the subject by State Horticultural Commissioner Cook.

OLIVES.—This summer fruit men at Corning were immensely pleased with the idea, as an olive grove produced lots of alfalfa and the trees rivaled any in the vicinity. This fall the smile came off with a jerk and no more alfalfa will be grown among olive trees. The trouble is that the olives kept on doing nicely, with little idea of ripening. They were too green to pick when the pickling season came on and hung on the trees until the frosts came along and changed them from possible pickling olives worth \$160 per ton, to oil olives worth \$45. Alfalfa may be alright for olive trees in most ways, but the irrigation of the alfalfa keeps the fruit on into the frost season and frosts are bad enough anyway, so alfalfa in olive groves is no more in favor. In fact, irrigation of olives has to be practiced with the memory of the fact that delay in ripening may develop, and liability of frost injury thereby increased.

DECIDUOUS FRUITS.—Horticultural Commissioner G. H. Hecke of Yolo county stated that in his county apricots and almonds went with alfalfa very nicely, as they ripened and were picked in a way that made the alfalfa cause no trouble, but that the long harvesting period of prunes, the method of harvesting and other features made alfalfa in prune orchards highly undesirable.

An interesting development with almonds is the fact that on the A. B. Humphrey place at Mayhews, Sacramento county, where alfalfa in the orchard has been a great success, trees on almond root have begun to go under, although for a few years they appeared to do finely and a condition has been reached where either almond roots or alfalfa roots have to go. Trees on peach roots have given no trouble. Conditions on this ranch were described in detail several years ago and it will be remembered that there was clay about four feet down, and therefore it would be hard to secure good drainage. Probably on deep soil with good drainage where no water would stand on roots, no difficulty with alfalfa and almonds would arise.

Pears and alfalfa, of course, get along excellently together, as has been frequently demonstrated, there being also less likelihood of distributing blight through the roots than where clean cultivation is practiced.

WALNUTS.—Walnuts and alfalfa have been highly commended recently where there is water for both, especially in northern California. In Orange county also, Horticultural Commissioner Roy Bishop told of the great success of alfalfa and walnuts in a well established grove. The trees did excellently and the owner received lots of good from the alfalfa.

Cultivation is saved by growing alfalfa and the roots go so deep that they give life to the soil many feet down, giving more plant food for the tree

roots. Alfalfa is also an excellent provider of nitrogen, which it gathers from the air. An essential point to remember is that there must be good drainage and enough water for both alfalfa and tree, for if either suffers, it will be the tree, not the alfalfa.

PRUNES IN THE FOOTHILLS.

To the Editor: In your issue of the 10th, in answer to the subscriber on Italian and French prunes, you say the prune tree encounters some troubles on the south and west slopes of the Sierra foothills, which it escapes in the valley and coast regions. As I am planting prunes at an altitude of 2500 to 3000 feet, I would like a little explanation of what I may expect. I would also like to have your idea as to the age either of the above named prunes would require to produce a fair crop in average soil and climate, and oblige.—E. G., Berkeley.

[The trouble to which we referred was the gumming of the base of the stem and the larger roots which could not be traced to sun burn nor to root borers. In the absence of cause, it has

been attributed to the high heat of soil on slopes facing the afternoon sun. The experience is different from anything encountered in the great or the coast valleys, as stated. We do not know how prevalent it is. It would be interesting to hear from our foothill readers why they do not grow more prunes in a region where the fruit would ripen early and where conditions are so fine for curing. We expect prune trees to bear something worth while in the fifth year.—EDITOR.]

ONION GROWING.

To the Editor: Will you kindly tell me if you soak onion seed in water before planting. I have tried three packages so far, but they wither away and die. I will be glad to have you advice. I have good success in other vegetables.—J. G. H., Los Angeles.

[Onion seed must be fresh and good. Soaking the seed in water is desirable especially if you are sowing in a dry soil or late in the season when the soil is likely to become dry, but there is a great deal of onion seed on the market which is not good and soaking will have little effect upon it. Your onions should grow without with-

ering away, if you succeed in getting a start with the plant. Dying is generally due to lack of moisture in a light sandy soil, or sometimes too much water if the soil is inclined to be heavy and sticky. As you are growing other vegetables successfully, however, you must understand this and we are unable to judge why it is that you do not succeed with onions, which are usually quite easy to grow under about the same conditions which give success with other vegetables.—Ed.]

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The Kitchen Garden for the Farm.

[Written for the PACIFIC RURAL PRESS.]

As a general rule the kitchen garden at the country farm house receives but little attention. There is no good reason why it should be so. The only reason given usually is, that the farmer only cares to give his attention to his acres. He much rather would handle implements such as the plow, the harrows, the roller, etc. The idea of using the spade, rake or hoe is distasteful to him and he never gives himself the chance to find out his mistake.

The farmer's wife, however, always bemoans the fact that she has not a little plot of vegetable garden from which to gather fresh vegetables for each day's requirements. The vegetable man never has what is wanted, his selection often is poor, and the vegetables do not look fresh. Maybe the house is out of the rounds of the vendor and then the "fresh" vegetables must be had from the "cans."

No one will question the superiority of fresh vegetables. A small vegetable garden is a great boon and a few rods can be made to produce sufficient for the family's needs if a little thought is given to selection of varieties and planting. To a great many people a cabbage is just a cabbage. They do not realize that there are cabbages and cabbages and that in every class of vegetable there are good varieties and poor ones.

This is the time of the year for the sowing of seeds of many varieties and it surely will be worth while for the farmer to plan on having a vegetable garden. He ought to have a little consideration for the one who needs must think of dinner long before he does.

LOCATING THE FARM GARDEN.—The kitchen garden should be as near the rear of the house as possible so that the good wife will no have to travel far for her needs and also so that it will be within easy access when there is some little hoeing or gardening to do in the afternoon after indoor duties have been done. The rancher's wife does not look on the work around the garden as "labor." It is a chance for a little healthy outdoor exercise and the thought of fresh vegetables is encouraging.

When the spot for the kitchen garden has been decided upon some good farmyard or stable manure must be hauled on and liberally scattered on the surface. If it has not been convenient to plow the piece, it should be spaded over the full depth of a good spade, mixing in the manure as the ground is turned over. The surface should be left rough until the time for planting has come. It is beneficial to let the air and rain operate on the roughly dug land. On the other hand if planting is to be proceeded with right away, the soil should be broken down as spading proceeds.

As soon as it has been decided to have a garden the rancher wants to know what his wife wishes to plant. She knows that she wants the best in each case. The seedman's catalogue is produced but the list is bewildering. Not having seen the various varieties, it is hard to say which is best. Many are good, yet one or two may be inferior yet listed, because of the man who wants quantity with no thought of quality. A list of the best varieties with a few cultural notes will be welcomed by all planters at this season of the year.

BEANS.—Beans are popular with everyone and a big selection is always offered by the seedsman. In the dwarf green podded section Morse's selection of Stringless Green Pod is very fine. For quality there is none better. For a wax podded dwarf bean Golden Wax easily leads. Michigan White Wax is also good. As a pole bean Kentucky Wonder is hard to beat. Its splendid cropping qualities and quantity are well known.

Lima beans can be grown well in California and used green shelled. Fordhook Bush is a splendid variety. The quality is all that could be desired and where it is possible to obtain this variety, no other is worth considering.

Bush beans should be sown as soon as all danger of frost is over. Sowing at intervals of two weeks will give a good succession. Sow in rows eighteen inches apart, one pound will sow a row sixty feet long, plant the seed one inch deep. Bush Lima beans can be treated in like manner to bush beans.

Pole beans can be sown about the same time as bush beans. Plant in hills about three feet apart and to each hill put a stout stake from six to eight feet long. Sow seven or eight seeds to each hill but thin out the plants to three strong ones.

BEETS.—Beets are always a popular vegetable and is certainly much better when gathered fresh. One of the very best table beets is Morse's Improved Blood Turnip. The color is rich and the quality excellent. Those preferring a large beet will find Detroit Dark Red good. Sow (any time in spring) in rows twelve inches apart. One ounce will sow fifty feet. Thin out the young plants four inches apart.

CABBAGES.—Cabbage can be grown by everyone and anywhere, but a careful selection of varieties will be profitable.

For an early cabbage Copenhagen Market is easily best. The heads are flat, good size and very tight and crisp. Early Winningstadt is next. It forms a pointed head but makes a remarkably tight head. Good late or winter cabbages are Danish Ball Head and Burpee's Surehead.

Sow cabbage in short rows of two or three feet or sow a small patch three or four feet square broadcast. When the plants get about six inches tall transplant them to permanent quarters. Rows fifteen to eighteen inches apart, according to variety, are best and put the plants fifteen to eighteen inches apart in the rows. Cabbage can be sown almost any time of the year. March is a good time to sow for summer and fall use, June and July for late fall and winter use.

Cauliflower is an excellent vegetable and easily grown. Treat in same manner as cabbage. Early Snowball is the very finest variety. The heads are medium sized, very tight and very white in color. California Wonder is also very fine. Cauliflower and Brussels sprouts require the same cultural treatment as cabbage.

CARROTS.—Carrots are very handy at all times to be within reach of the kitchen and there are several excellent table varieties. The small French Forcing carrots is well known and is excellent for early use. Scarlet Horn is a splendid short variety. Oxheart and Chantenay are two good carrots.

Those preferring a longer carrot will be pleased with Danver's Half Long.

Carrots can be sown any time from January onwards till fall. One ounce will sow about one hundred feet. Plant one-half inch deep in rows ten inches apart. Thin out plants according to variety, from two to four inches apart.

CORN.—Corn, the most popular of all vegetables, should be given room in every kitchen garden. Everyone knows the advantage of having fresh corn gathered at the right time.

For early corn, Crosby's Early, Early Red Cob Cory and Stabler's Early are very good. As a late corn, Golden Cream is easily first. The flavor of this excellent variety is decidedly fine and places it above all others. It is very prolific. Early Mammoth or Alameda is a popular variety, but the flavor and quality are poor.

It is much the best plan to make small sowings of corn at frequent intervals. Sowing can be commenced about the middle of April. Corn can either be planted in hills or in rows. The more preferable way is to plant in hills three feet apart each way. Plant six or eight seeds to the hill and thin out to three or four strong plants to each hill. If planted in rows, the rows should be three feet apart and the plants thinned to one foot apart. One and one-half pounds of seed will be ample for one hundred hills.

CUCUMBERS.—A few cucumbers in the garden is a good thing and a very few hills will suffice for a family. The seed should be planted after April in hills four feet apart each way. Sow ten or twelve seeds to each hill one-half inch deep and thin out plants leaving four strong ones to each hill. Keep ripe cucumbers cut off to aid productiveness. Arlington White Spine is a perfect cucumber for general purposes. For pickling, Chicago Pickling, Cumberland Pickling and Boston Pickling are all good varieties.

KALE.—Kale is a vegetable very little used in this State for table use but much grown for chicken feed. It is very good for that purpose, being so handy and withstanding frost. For table use Dwarf Curled Scotch is best. For chicken feed Jersey Kale is the best variety.

LEeks.—The Leek is a vegetable whose value is not sufficiently appreciated for winter use. To get the best results from Leek they should be sown in rows ten inches apart during March. A short row of thirty feet will give sufficient plants for an ordinary family. During June and July the plants should be transplanted to their winter quarters. A trench about eighteen inches deep should be taken out and into the bottom put a good layer several inches deep of fresh stable manure. This should be well firmed down by treading. On top of this put three inches of well rotted manure and then eight inches of good soil. The leeks should be planted three inches deep and six inches apart. By giving plenty of water during the dry months and keeping the leeks earthed up as they grow, good leeks with several inches of blanching will be had. The best varieties are American Flag and Giant Musselburgh.

(Concluded next week.)

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Cor. Second and Main Sts.,
Santa Ana, Cal.

Where the Farmer Stands in Workmens' Compensation.

To the Editor: Will you kindly state just where the farmer now stands as an employer under the present laws for compensation for accidents to industrial workers?—Reader, San Jose.

[ANSWER BY A. J. PILLSBURY OF THE CALIFORNIA ACCIDENT COMMISSION.]

To the Editor: Obedient to your request, I beg to state, as simply as possible, the status of the farmers of California with relation to the Workmen's Compensation, Insurance and Safety Act.

The farmers of California have three courses from which to choose in relation to farm accidents.

1. They may do nothing whatever about the matter and await what happens, in which event, if one of their farm employees should be seriously crippled or killed, through a want of reasonable care, either on the part of the farmer himself or some member of his family, or some other employee, such farmer would be liable in damages to whatever extent a jury should assess those damages and the court sanction the verdict. Only those farmers who do not think it worth while to carry fire insurance upon their houses, or barns, upon their combustible crops or other fire hazards, or who carry no life insurance, will wish to carry the common law risk of injury to their workmen. That risk is, however, entirely outside of the Workmen's Compensation, Insurance and Safety Act, and is a risk which all employers have carried, with some modifications for the better part of a century.

2. The farmers of California may choose to remain under the common law liability for damages, for injuries sustained through want of reasonable care, as above explained, but may take out insurance against their liability with any insurance company permitted to do business in this State. Such insurance will cost them \$1.50 on the \$100 of payroll, and that insurance will merely insure themselves against the consequences of suits for damages, but will not insure their help against the consequences of injuries. Under the contract of insurance which they enter into under this law, they must agree with the insurance company to leave the settlement of the issue between themselves and their injured farm-hands wholly in the hands of the insurance company and its agents for adjustment, and they must obligate themselves to furnish evidence and do all that they can to aid the insurance company in defeating any claim for damages which their injured farm-hands may make. This kind of insurance is bad, for the reason that it insures the wrong man against the wrong thing. It insures the farmers against the consequences of a lawsuit instead of the farm-hand against the consequences of an accident, and a lawsuit, with its attendant loss of time, is likely to follow every claim unless the insurance company can settle with the injured person for less money than it will cost the insurance company to fight the claim. It puts the farmer in a position of antagonism to his farm-hand when he would usually prefer to help him than to see him get the worst of a controversy.

3. The farmer may, at the cost of a 2-cent stamp, addressed to the Industrial Accident Commission, 525 Market

Street, San Francisco, "elect" to come under the compensation provisions of the Act, as to his farm laborers, as he already is under the compensation provisions of the Act as to all labor that he may hire except that engaged in farm labor or domestic service. The Workmen's Compensation, Insurance and Safety Act, unless the farmer elects to do business under it, touches the farmer only when he employs non-agricultural or non-domestic labor.

Now, if he elects to come under the compensation provisions of the Act he will still need to carry insurance, but the risk will not be as great, in any one instance, as under the law of liability, although the whole number of accidents might be substantially equal to that under the law of liability for damages, and every prudent farmer would wish to carry compensation insurance.

Compensation insurance will cost him \$1.50 on the \$100 of payroll, just the same as under the law of liability for damages, but with this difference, in the event of an injury, and a controversy over such injury, his insurance carrier will be substituted for him, as defendant, and he will be absolved from all liability in the premises. There will be no suit to defend, no compensation for him to pay, or doctor's bills, or anything else except his premium on his insurance. It is not he, himself, in this case, who is insured against the lawsuit, but his farm-hands are insured against the consequences of accidents and he does not have to fight them, but is free to help them in any way he can. There is nothing in the relation to put him enmity with them.

Now, the average California farm, according to the United States census, is worth \$16,407.70, and the average labor cost is \$894.24, making the average cost for compensation insurance for the average farm \$13.42½ per year for complete coverage for the farmer against his liability, and complete protection for the farm-hand in the event of injury. It does not seem to me that any prudent farmer should hesitate over fifteen minutes in making up his mind which of these courses to pursue.

Not only may the farmer thus insure his farm-hands against the consequences of injury, but if he wishes, he may separately estimate and state his own wage value and that of the working members of his family, adding the total to the payroll, and insure himself and his family against the consequence of injury, a form of protection that he frequently needs almost as much as farm labor needs it.

In my judgment the insurance rates above quoted are too high, but we have no statistical information regarding agricultural accidents in California upon which to determine what they should be and they are made high enough in order to be certain to cover the risk. If any farmer insures his risk with the State, and at the end of the year it is found that the insurance rates charged generally have been too high, the excess collected will be returned to the policy holders and the rates will be reduced as the light of experience enables the Commission to see how much they may be reduced. The other insurance companies are not making this offer to policy holders, but

inasmuch as the State Compensation Insurance Fund is not to make a profit it is free to return what would constitute a profit to the policy holders.

I thank you for this opportunity to lay the whole matter before the farmers of California and I wish to add

that I shall be very glad indeed to answer any questions which any of your readers may wish to ask in relation to compensation or insurance, whether asked through your columns, or directly of this Commission at the above mentioned address.



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TREES

WRITE FOR PRICE LIST

UNITED FRUIT CO.

NEWCASTLE, CAL.

Success of the Raisin Company.

(Continued from Page 129.)

of the steps leading thereto. How the raisin growers of Central California finally, after a number of failures, succeeded in affecting a practical organization, controlling almost the entire raisin product of the State, was told effectively by H. W. Wrightson, of Fowler, past state president of the Farmers' union, at the recent state convention of that body in San Jose.

"As prune growers," he said, addressing the Santa Clara farmers, "you have gone through all the experiences to put your business on a paying financial basis that we as raisin growers have gone through. Up to the point of our last movement, which is holding out so great promise for the future of our industry, and I am convinced that prune-growing will not be put on a safe basis until you do what we have done.

"We have bought 96 per cent of the raisin output of California for three years, with an option for two years longer, and the whole crop is in our hands. We can regulate the supply, and we can fix the prices, which we aim to do on a fair basis for grower and consumer. We have had all sorts of raisin growers' organizations in the San Joaquin valley, and all but the last have gone to pieces. Finally we conceived the raisin exchange, which was simply a company for the promotion of the actual business corporation that we afterwards organized. We got in 2000 members, at \$10 apiece, and we used the money to make exact statistics of the acreage, the age of the vines and production, and a complete list of growers, and all this we embodied in an exact map for our guidance. We hired expert men to do the work, and it was thoroughly done. We had at first intended to operate an open exchange for buying and selling, but it was objected that the raisins might be dumped in so rapidly as to cause a slump, so we abandoned that scheme. You prune-growers should have a similar map of your prune acreage, etc.; then you will be in a position to go ahead intelligently with a practical organization for selling.

"Having perfected these essential preliminaries, we formed a million-dollar corporation. We could have got capital from the bankers and others business men, but what we desired was purely a raisin-growers' corporation, so safeguarded that it never could be taken out of their hands. And so we went to work. It was a big undertaking, but now we have 5000 growers in the corporation that was capitalized with their own money for the purpose of buying and controlling their own raisins. It is owned by the growers. It is strictly a farmers' organization. It may be a trust, but it is a helpful trust, for the benefit of the farmers, and it is so recognized by the government. The average holdings of the members is less than 18 acres each. It can never be controlled by capitalists or outside interests. Should the re-selling of the raisins by the corporation, after it has purchased them from the growers, be at a price above the contract price paid to the growers, plus the cost of re-selling, etc., the balance goes back to the growers.

"We formulated a subscription form and a voting trust agreement. We divided the State into five sections, and we elected five men from each section,

every man to be a land owner in his section, forming a board of trustees of 25, who elected seven directors, who elected a manager. These trustees cannot be recalled, and they hold for a term of seven years. Then we got up a contract plan whereby the growers are to be paid prices on a rising scale in proportion to the crop secured. The growers liked the plan, the more that came in the greater price they received. And finally, our business has grown to such dimensions that we have been compelled to add a half million to our original million capital."

SKIPPING A YEAR'S PRUNING.

To the Editor: Will you kindly advise me through your columns as to whether, in your opinion, any particular harm would result from not pruning my orchard of young fruit trees for one season. There are about thirty acres of mixed trees, most of which are three years old, and which have been regularly pruned each season. However, of this lot there are several acres of trees that have only been set out a year and which have only received the pruning (a thorough one though) given them at the time of planting out. The entire orchard is growing along nicely being set out on good soil and receiving the usual attention as regards plowing, cultivating, etc. Moreover, same is situated in a region of excellent rainfall and the soil retains the moisture well. Certain conditions have arisen, however, that will make it a very difficult matter to get these trees pruned this season—at least while same are dormant, and I am somewhat concerned as to what the effect will be on the trees. If such a thing would benefit them in any way for the lack of pruning this season I could of course give them an unusually severe pruning next season, or treat them in any special way that you might suggest.

May I count on you to advise me in this matter, as you have been good enough to do more than once in the past on other problems?—OLD SUBSCRIBER, San Francisco.

[It can be done without serious injury with the older trees which have been stiffened by thrice cutting back. Next year you can cut into the older wood as seems desirable. A good many growers play the game that way. The trees now a year in the orchard should be pruned this winter or even after growth starts if necessary.—EDITOR.]

IS THE STANDARD PRUNE SELF FERTILE?

To the Editor: Please state if a new Standard prune tree would bear fruit if planted in a yard by itself. In other words, will it pollinize itself?—F. J. M., Angels.

[Presumably yes, but we do not know it from observation.—EDITOR.]

CALIFORNIA NATIVE PLANTS

Write for my new price list of California Native Plants, containing fifty-eight choice species, all of which are worthy of a place in any garden.

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are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

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provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection. Call and talk it over with us, or write for our 1913-14 catalogue.

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ONE, TWO AND THREE YEAR OLD

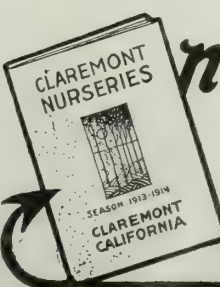
FRED. L. BORUFF, San Fernando, Cal.

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Mr. Etter's Faith in Filberts.

To the Editor: Because you have said that nowhere in California can the filbert of commerce be successfully grown, I desire to express my opinion and say that I believe that they will succeed in the mountains of an upper coast district.

Sixteen years ago I planted two varieties here at Ettersburg. One of these; the red Aveline, is an extremely shy bearer. The other, which is in size and shape identical with the large round filberts of commerce, is a heavy bearer. It has never failed to produce a generous crop each year, and now produces about 20 lbs. of nuts. They fill well and I see no reason why if one had an acre instead of a single bush, they should not be profitable. They will establish themselves and grow like the wild filbert without cultivation, so their principal need is the annual removal of sprouts that come up about the base of the plants. The bushes are much thriftier than the native filbert as it grows here.

I have given this filbert question some thought for a good many years. As it is now, we have not what we need to fill the bill. That is, the cultivated filberts do not exactly fit the climatic conditions here. To get at the meat of the subject, one must do with the filbert what I have done with the strawberry—get together all the filbert species and through hybridization of all the various forms, including our native types, it will be possible to get varieties that will meet our every want. Just as I have got so many, and such wide variations in strawberries, so too, will we get them in filberts. Just as I have now hybrid strawberry varieties with much of the blood of our native species that are almost as much at home as the natives themselves, so too, will it be possible to produce varieties of filberts that will so nearly fit our conditions that it will be possible to build a big industry on large tracts of mountain land that today grows the wild hazel so abundantly.

I do not believe the wild hazel could be worked over by grafting as they are not as vigorous as the European species I have here. Furthermore, it is more than likely that the hybrids would be more vigorous than even the European varieties.

As for fruitfulness, it is extremely probable that in the hybrids we would get similar results to what I obtained in hybridizing our native strawberries; the same in crossing the wild black gooseberry with the cultivated sorts, and the native scarlet columbine with the cultivated garden columbine. In this latter hybrid some of the plants grow fully five feet high and far out-rank either parent of the combination in capacity to blossom. I have suggested an outline of a piece of horticultural work with the filbert that could be worked out to almost a certainty, and it could be done at a cost of but a few thousand dollars. Once accomplished, an industry could be built up that would annually produce an income of—well there is room enough to make it a big industry.—ALBERT F. ETTER, Briceland, Humboldt county.

[We also have no doubt of this. As we remember, we did not say the filbert could not be successfully grown in California: we said it had not been in spite of repeated trials of the best kinds of the old world, and we ad-

vised our querists to go slow in that line of enterprise. When it comes to making filberts to suit our conditions we have no doubt it can be done if a man is young enough at the start and can get money enough to stay with it.—EDITOR.]

SPLITTING OF FIGS.

To the Editor: I appreciated the article "The Ideas of a Fig Grower" in the issue of January 10, and wish to ask a few questions. What causes the Calimyrna fig to split? Is sandy soil more apt to cause the figs to split than heavier soil? I have a few trees seven years old on sandy soil. The trees do fine but the figs have split the last two years, so I began to think the fig (Calimyrna) is not much of a success commercially.

I planted seven acres last year to Calimyrna figs on the strength of the few trees doing so well, and wanted to plant five acres more this year, but losing two crops in succession on the few trees I have, makes me stop and think again. Can you help me out?—FRED W. MOORE, Dinuba.

[The causes of the splitting of fruits have never been demonstrated, so far as we know. It is quite widely believed to be due to irregularity in moisture—either in the air or the soil or both—producing too rapid changes in the moisture conditions in the tissues. Some fruits are more liable than others; and some varieties of the same fruit more liable than other varieties. We are not aware that the relations of soil character have been determined, but theoretically the most rapid changes would be expected in a sandy soil.—EDITOR.]

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"A Stitch in Time Saves Nine"

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

If you will write to us for the booklet "Feed the Soil that Feeds You" it will be promptly mailed. free. It explains that fertilizing is an investment, not an expense.

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California Black Walnut Seedlings.
Grape Vines, Berry Plants, etc.
Plants of the new Banner Strawberry.

Be sure to price our choice stock of apple trees.

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Just issued—a complete treatise on Date Growing; 300 pages, 40 illustrations. The only book published which gives a full, clear and practical account of growing the Date Palm. \$2.00, postage 16c.

WEST INDIA GARDEN

Root Dipping for Crown Gall.

To the Editor: Will you kindly answer in the columns of your valuable paper the following question:

Will disinfecting young trees (nursery stock) with strong solution of bichloride of mercury injure them in any way? I expect to replant the missing and dead spots in my young orchard soon and wish to replace with healthy trees, if possible. I expect to dip the roots after shortening back in a strong solution of bichloride of mercury or formalin in the hope of killing the germs of crown gall or rootknot.

It is a well known fact that almost all nursery stock is infected or stands a good chance of being so, before it leaves the nursery by coming in contact with diseased trees. There should be some reliable way of disinfecting all stock before it is set out in orchard form.

To show the infectious nature of this disease, I will mention a little experience which I had a few years ago. I had twenty-nine trees over after setting out an orchard, and I set them out in a row about one foot apart where it was handy to irrigate them, on ground that had never held an orchard tree before. I expected to fill in the following year with them, but in digging them up found twenty-four out of the twenty-nine were infected with crown gall, although all appeared sound when planted.—H. N. L., Chico.

[This experience is interesting. We are not aware that safe root-dipping with a germicide has yet been demonstrated. The University experts intended to make a broad experiment with root-dipping but we understand that they were not able to get at it because of pressing frost work, etc. We cannot therefore give you satisfactory prescription, because we do not know what effective germicide can be safely used. In the case of mercuric chloride (corrosive sublimate) there is no use in employing a "strong" solution—one part to 1000 of water will do all the germ killing that a strong solution would do but we cannot tell you how the roots would stand that. Does anyone know?—EDITOR.]

ALMONDS ON MYROBALAN.

To the Editor: I notice that some of the nurseries quote different varieties of Almonds on Myrobalan root. Can you tell me, either through the

PRESS or otherwise, 1st—How they bear, 2nd—Do they make a good union, 3rd—Any other differences from the almond on its own root, except their being able to stand wetter land?—Geo. W. ASHLEY, Stockton.

[No; we have not knowledge enough to offer any assurance. It is customary in Europe to work the almond on seedling plum stock—presumably for the reason you state coupled with the hardness of the Myrobalan against hard drying of retentive soils on uplands also. Who will give us points on the desirability of this practice?—EDITOR.]

KILLING ANTS AND DANDELIONS.

To the Editor: Referring to some of the inquiries answered in your last week's issue I wish to give you some satisfactory experiences of my own.

ARGENTINA ANT.—A vacant lot adjoining my premises was honey-combed with the homes of this pest. I got a gallon of gasoline, and after enlarging the ant hole with a pointed stick, poured in a tablespoonful or more of the fluid. Having quickly treated a dozen holes a light was applied to each, going over the whole occupied area in this way. The treatment was so effective that there were no ants to be found there a short time after. It is unlikely that all were killed, but those escaping destruction must have emigrated to more congenial quarters.

LION'S TOOTH (Dandelion) IN LAWN.—At the beginning of our occupancy our twelve hundred feet of two year old lawn appeared to contain a greater number of this weed than of grass plants. It really seemed a hopeless undertaking to rid the lawn of the weed. But it proved only seeming, like every other big job until it is actually tackled. A narrow kitchen knife was sharpened to a square at the end, chisel-like. A little jab below the crown and an upward jerk with this instrument closed the career of one plant; and a half hour each morning for a short time cleared the lawn completely. The larger plants have enough food stored in the root to persist in their renewal; so I pushed a piece of 3/4-inch gas pipe down over each, bringing up the root and leaving a small hole that the grass quickly covered.

This work was supplemented by a

search of the immediate neighborhood, especially on the prevailing windward side, and the destruction of all the near-seeding dandelion plants. It is now rare to find one of the plants in my lawn.—R. R. SNOWDEN, Los Angeles.

[Dr. Snowden certainly adds industry to his other good traits. We have some dandelions in Berkeley which, for aught we know may endanger his lawn and we advise him to look after them.—EDITOR.]



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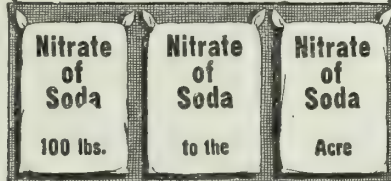
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"Orange Culture" is a book of vital interest to every orange grower. We will send it FREE if you will request us.

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—FRESNO, CAL.

Constructive Agriculture—No. 5.

Farm Advisers for California Counties.

[Written for the PACIFIC RURAL PRESS.]

[Most articles in this series on "Constructive Agriculture" will relate to some special branch of agriculture or farm life. This upon the work of county farm advisers includes everything, for the farm advisor must help along everything relating to farming, and besides, his work lies at the bottom of things and he can perhaps do more than any other agency to make for a higher standard of farm life in California and the country at large. The subject of farm advisers is just about the most important thing in California today and much interest is shown upon the matter. It is the purpose of the following to tell about the work of a farm advisor, why each county should hurry to secure one, and how one can be obtained.—EDITOR.]

The purpose of the farm advisor is essentially to bring the Agricultural College and all the improved methods of farming direct to the farmer, to give to every farmer the most advanced methods of agriculture, and, incidentally, to bring the farm to the College of Agriculture so that it can learn more and make more rapid progress in solving the difficulties continually arising in agriculture and in discovering the principles that underlie successful farm practice.

The appointment of a farm advisor comes from the College of Agriculture and he remains an employe of that institution, though serving directly and wholly the farmers of the county in which he is located. The farm advisor must be a graduate of some agricultural college, but with the rawness taken off and the sense knocked in that two years of practical experience will bring. In other words, the farm advisor is not a new graduate who learns his practical farming after getting the position. This two years experience can come from actual farming, or employment on the staff of the agricultural college, or in some other effective way. At least the advisor must have the scientific training and practical experience as well, which is as it should be.

How SECURED.—A farm advisor has to be gone after. The farmers of the county have to get together with their supervisors and various public organizations to make legal provision for appointment and work and then to provide funds for the work. The College of Agriculture then provides the man and pays his salary and such expenses as are not directly incurred in county service. This costs the college \$2000 per year, or a little more. The county has to provide an office, laboratory, traveling expenses (in the county) so that he can get around to his work, and such incidental expenses as are necessary. This will total approximately \$2000 also, so the county has to put up \$2000 to secure an advisor, and also guarantee \$4000 more for the next two years. In other words, the college does not want to appoint a man for only a year and wants to be assured that the advisor will have a good three years' test. If he don't make himself so valuable by that time that the county will refuse to let him go, the college is perfectly willing to call the thing a failure. It has been such a success in other parts of the

country that no such result is ever expected.

The Lever bill now before Congress will, if passed, lend the aid of the U. S. Department of Agriculture to this work in as substantial a form as the agricultural colleges are giving and make it still easier for the counties to finance their farm advisers, or to get still greater returns for the same expenditure of money. Thus Federal, state and county governments will all be co-operating in this work.

DUTIES.—The duties of a county farm advisor can almost be imagined from his title. He should be able to suggest proper plans for barns, for farm sewage systems and home water supply, best methods in a general way for laying out an irrigating system, crops for different soils, locations and seasons, implements to use, depth of plowing, feeding of cattle, methods of pruning and other things which a scientifically trained man with the facilities of an agricultural college to draw upon ought to be able to help in, if he made it his business to do so.

Such advice must come, however, largely through local organizations and meetings, as it is found that one man will soon be overwhelmed in examining individual farms thoroughly and giving detailed advice thereon. Advice must come largely through studying the special problems of a section and finding out what was best to do under the subject, then discussing the thing at various meetings, or arranging for demonstration work where many persons could gather at a time. Such work has been done to a limited extent through Farmers Institutes and field demonstration institutes, but more effectively than could be done by a man living in the section and studying the thing out and working it up all the time. Then, of course, as much time as could be given would be taken for individual study of farms and farming methods with advice. A great deal of that would have to be done before a man could be of the greatest value in a district.

In doing such work the advisor would work in harmony with the agricultural college of the State where he was located (though we are speaking particularly of California). He would be, and is supposed, to find the special problems of his district and either work them out himself, or if he cannot do so, or if it would take too much time, to call for the specialist in that line at the college to come and work it out. Thus the agricultural troubles are quicker solved by this method than when there is no direct connection between county and college and no one whose business it is to promote agricultural interests and methods.

ORGANIZED EFFORT.—The agricultural agent, or farm advisor, has the special duty of promoting organizations of various kind related to agriculture, including corn clubs in Eastern States or their equivalent here, agricultural high school clubs, and others.

It is planned that his duties include work on co-operative marketing and buying to let the farmer obtain more for his produce than he now does, improving the economic side of farming as much as possible.

Lastly, he is expected to be a public-spirited citizen of the county in the



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Martinez, Cal.

best sense of the word, doing what he can to improve social and living conditions in the county, and making every public gathering and organization in which the rural population was interested, a success.

It is felt that a person that has all these qualifications is hard to find, but the fact remains that all these duties and possibilities have been ignored until recently and that well trained men with good practical experience who give their whole efforts to the above work can obtain results that would hardly be expected. Farm advisors are a new thing, none having been in office more than about two years, yet the counties in Eastern States where they are working would not let them go for many times their salary. In California there are but two farm advisors of the kind described and both of these in office only a short time, but altogether north of the Mason and Dixon line and in the West there are between two and three hundred counties with such offices.

A CALIFORNIA EXPERIENCE.—The first farm advisor in California was A. H. Christiansen, appointed for Humboldt county, and one thing he has done will deserve mention as an illustration of possibilities.

He found that most Humboldt county soils needed lime. About everybody knew this long since, but it was nobody's business to see about it and little if any lime was used. He investigated and found that lime cost \$20 per ton and up, each dealer naming a price that pleased him. By having a number of farmers order together, the price was reduced materially, but owing to isolation of the county, transportation costs, and so on, the price was still high. He found, however, that there was a whole mountain of limestone near railroad transportation, the stone testing practically pure (98 per cent carbonate); that sawdust and waste from a saw mill nearby could be obtained for almost nothing; and that the lime could be made at a quarry and sold at \$4.50 per ton—quite a reduction to say the least. How much good this will do to Humboldt county soils is a question for time to tell, but their need of lime has been known and it will be a great thing to put a lot on at little expense. According to a statement made in the county this one piece of work is worth the advisor's salary for ten years.

CALIFORNIA METHODS.—California counties for long have had county horticultural commissioners, who, through executive officers, have had by the nature of things to help somewhat along the lines of a farm advisor, although in much less degree and mostly along horticultural lines. Their work has been highly appreciated and of much value. The farm advisor will have no executive, or might say, police work, to do, but will give his whole attention to educational or such work.

The advisor will also take in every branch of agriculture, live stock, dairying, fruit and general farming, and appointments will be made with special reference to the agriculture of a county; that is, where fruit interests are predominant a horticulturalist will be appointed, and a live stock man, or one with veterinary training in a stock and dairy county. It is hoped ultimately to disregard county lines and appoint a man for a district to look after certain lines only, appointing another advisor for districts with different interests. For instance, west-

ern Tulare county would have a live stock man, eastern Tulare a horticulturalist.

It is an interesting fact that California for quite a few years has had men sent out from the University to do special work in counties, somewhat as an advisor should do, like W. H. Volck, who went from such a position to be horticultural commissioner of Santa Cruz county, and the first public suggestion for farm advisors was made by Prof. Warren T. Clarke, head of the University Extension in Agriculture, at a convention in Portland in 1904. Our widely diversified farming in California and the great problems of agriculture make farm advisors especially advisable, and as we in a way begun the work, we should make the greatest success of it.

Any county can have an advisor that asks for it and bears its half of the expense. Two counties already have advisors, about ten more are thinking of it, and all should go after them tooth and nail. Assistant Professor B. F. Cocheron of the University Extension in Agriculture is especially appointed to visit counties interested in the subject and will explain it in detail on request. The first come the best served and it is an opportunity not to be overlooked.

POLLINATION OF TRAGEDY PRUNE.

The question of what variety would best pollinize the Tragedy prune was brought up in a recent issue of the PACIFIC RURAL PRESS and a little light on the matter can be gained from experience in Contra Costa county. On the ranch of Fletcher Ames in the Alhambra valley, near Martinez, there are a number of Tragedy prunes which have never borne well. Acting on the advice of another fruit grower, the owner grafted in some Clyman scions on a number of trees and after these had blossomed a decided increase in yield was noted, the trees near the Clyman wood also bearing more uniformly.

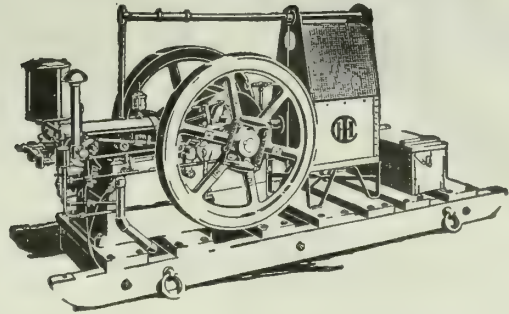
The way that Burbank pollinized Tragedy was not demonstrated on this ranch, but in the orchard of Frank Swett, a short distance away, there are a number of Tragedy prunes near Burbank's trees with no apparent advantage in the fruiting of the former.

On the subject of pollination, the effect of Silver prunes on Robe de Sargeant has been seen on an orchard near Linden, San Joaquin county. The owner has about 450 Robe de Sargeants planted in alternate rows with Silver prunes and has gotten fine yields and large sizes. Neighbors with Robe de Sargeants alone have had smaller yields and smaller sizes, other things being approximately the same, and the men make re-plantings with French prunes or the Prune d'Agen. The fruit grower in question considers the Robe de Sargeant the best of all.

The Wickson also has the reputation of being an irregular bearer under some conditions. It is reported that in the Vaca Valley and elsewhere grafting in scions of the apple plum has made a great improvement in productivity.

Before long, grafting will have to be done and as it is recognized that there is vast room for improvement in productivity by cross pollination of varieties, the more information volunteered on the subject, the better for growers whose trees do not produce as they should.

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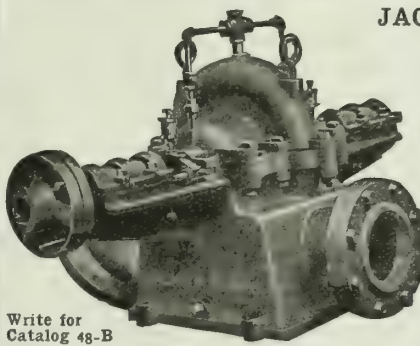
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AGRICULTURAL REVIEW.

Organizing Peach Growers.

In the Fresno Republican recently was printed a map with figures gotten up by the California Raisin Exchange showing that in the district of the San Joaquin valley from Madera to Visalia that there were 55,508 acres of peach orchards. Besides peaches, this district has of other orchard fruits the following acreage: Apricots 5112, nectarines 304, prunes 2263, and of variety orchards 2243, making a total acreage into orchards of 65,430. These figures and the maps are some of the results of the work of W. R. Nutting in his effort to help organize the peach growers into a co-operative marketing association. Such an organization is badly needed at this time to help in the marketing of the dried peaches now held by the growers. Notwithstanding the fact that last season's peach and apple crops were light, the dried peach tonnage being only about 20,000 tons against 30,000 tons the year previously, yet half of the crop awaits buyers, at prices that if they were to be sold would net the growers no profit. As a result of Mr. Nutting's work about 1,000 peach growers have signed up for membership in an association, but there should be at least 4,000 members from that district. To get some sort of action by the growers, a meeting of the committee on organization was called together at Fresno last week, and at this meeting Harry P. Brown, chairman of the general organization committee of the Raisin Exchange, was appointed to help in the organization of the peach company. The Chamber of Commerce of Fresno has also agreed to help in the matter, and a committee of five will take active charge of the campaign to secure more members and raise money. By the holding of district meetings it is thought that the organization work can be quickly closed up and the peach growers have made a decided effort in the work of disposing of their product.

Good Crops Evident.

Reports from all over the State indicate that we may expect bumper crops the coming season, for while some localities report too much rain, the majority of places seem to be well satisfied, as is shown in the following dispatches. From San Jacinto the report states that farmers are sure of fine grain crops, providing they receive more rain in March. A Fresno report states that the grain there is already six inches high and that quicker growth is expected from now on. From Gilroy comes the report that the wells are filled again and that the hills are well covered with grass. It also says good crops are now insured for the coming year.

Menace to Apple Growers.

Both the Watsonville Apple Annual Association and the Packers and Shippers association are taking active steps toward the defeat of the cold-storage bills now pending in Congress. One of the bills, H. R. 9266, prohibits the storage of articles for human food for a longer period of time than 90 days; bills H. R. 9530 and H. R. 9987 prohibit the re-storage of food products where they have been in cold storage for more than ten days, and provides for a system of branding and stenciling that will add to the bur-

den of expense on the apple growers. Letters have been sent to all of the Congressmen from this State asking that the bill will be defeated or at least revised to give the apple growers more reasonable clauses. The Raker bill providing for a standard apple box seems to meet with the approval of both the growers and packers with the exception of a few minor details.

Doings In Rice Fields.

Reports from Butte county state that the rice still standing in the shock, in that county, is standing the heavy rains exceptionally well, while from Princeton, Colusa county, comes the report that lessees have made a deal with the Sacramento Valley Irrigation Co. which will result in the planting of 300 acres to rice in that district this year. From Dinuba, Tulare county, a dispatch says that ranchers in the Traver district are expecting to plant considerable land to rice the coming season. The rice mill project which had been planned for Marysville has been abandoned for the present and instead will erect large warehouses in that and other towns, and will build the mill at San Francisco.

With the Olive Men.

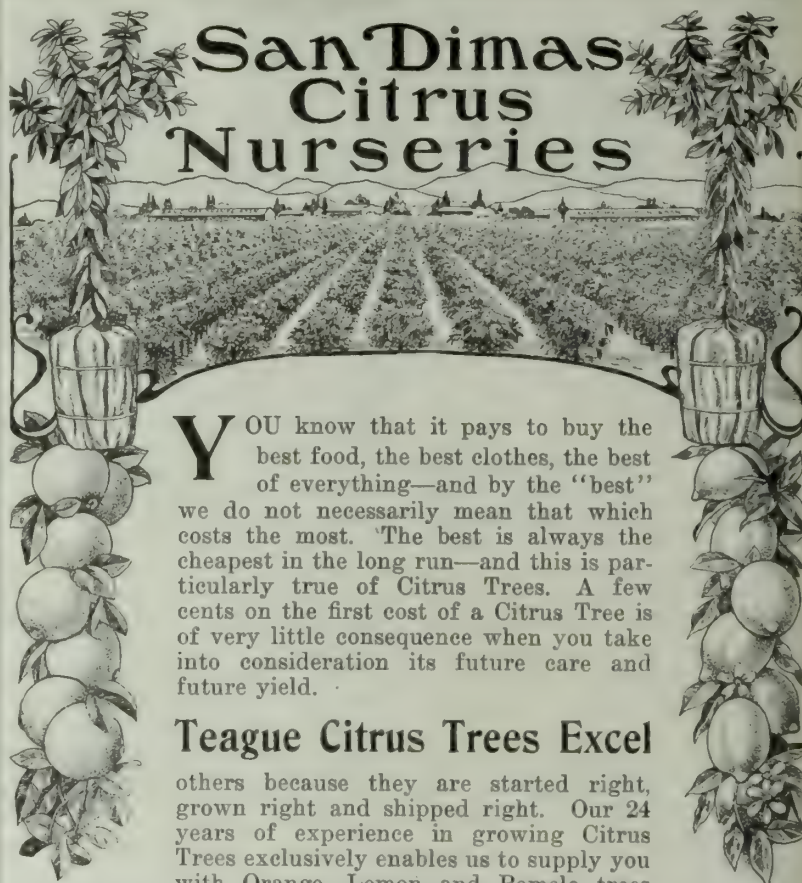
It is expected that the olive packing season will end about March 1st, in the Chico section, although the picking season is now ended. P. Bayer, of Oakdale, Stanislaus county, who owns five acres of olives near that town, realized good returns from his trees this year. He has found the Mission variety the best suited to his locality. From Porterville comes a dispatch that J. G. Lambert, of Los Angeles, is planting an 80-acre tract to olives, in Tulare county and that many others in that section are expecting to put out olives this year. The recent high prices seem to be having a decided effect on the planting in all districts this spring.

Vegetable Crops.

Large amounts of potatoes are said to be under water in the island district near Stockton, and unless the weather clears up soon it is estimated that there will be 100,000 sacks spoiled. A report from Imperial county states that there are thousands of acres of cantaloupes already planted in that county and that much of the planting has already sprouted. This is the earliest date that such a thing has happened in the county, and if nothing interferes the growers will ship earlier this year than ever before. Another dispatch at hand states that farmers in the vicinity of Sparks, Nevada, who have raised onions the past year, have made good money and that they are now shipping the crop. The price being paid is about \$60 per ton.

Biggest Citrus Crop.

E. Q. McCormick, of the Southern Pacific Co., is reported to have stated that the citrus crop for this year will be the biggest that the State has ever produced, and in line with this the recent estimate given by the Riverside Press, which has given reliable estimates for a number of years, the outlook for a big crop all over seems promising. Its figures are as follows: "Cars oranges, southern California:



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Redlands district, 3500 cars; Riverside district, 3000; Pomona district, 3500; Ontario district, 3200; Azusa-Glendora, 2700; Orange district, 2200; Highland, 1950; Covina, 1500; Placerville, 1100; Rialto, 950; Fullerton, 900; Corona, 800; San Dimas, 800; Whittier, 765; Duarte-Monrovia, 550; Anaheim, 500; Alhambra-San Gabriel, 500; Ventura county, 500; Colton, 300;

Bloomington, 250; San Fernando, 250; Pasadena, 150; Glendale, 100; Moreno, 60; Hemet, 25; San Diego county, 20; other localities, 130; Tulare county, 4500; Butte county, 375; Sacramento and Placer, 150; Kern, 45."

This makes a total of 35,270 cars of oranges for the State, and the estimate of lemons was placed at 3900 for the State.

The California Fruit Growers' Exchange estimates that there will be more than 40,000 cars of fruit shipped from the State, distributed about as follows, for the year ending September 1st: Northern California, 4500 to 5000 carloads; southern California, 38,000 to 40,000 carloads. There will be about 4000 carloads of lemons; 8000 to 9000 cars of valencias, and the balance distributed largely to navels and smaller shipments among other varieties.

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Viticulturists Get Busy.
Meetings were held last week at Santa Rosa and St. Helena by several hundred wine-grape growers in an effort to organize wine-grape growers into an association for the protection and advancement of the industry. Reports from Fresno state that the trade is taking more interest in raisins and that orders are now coming in to the Associated company in larger numbers than heretofore. James Madison believes that there will be little or no holdover crop this year and announces that the annual election of the association will be held in Fresno on February 11.

Drainage Activity.
The wet winter has set a number of farmers near Gridley to thinking that they are badly in need of drainage in that section in years like the present one. There is every indication that it will be impossible to put in the crops this year as early as desirable, and it is claimed that steps will be taken to remedy the situation at an early date. Another report states that A. L. Bliss, of Imperial county, is planning to tile his ranch of 160 acres near Holtville.

Meeting of Berry Growers.
The Sebastopol Berry Growers Association held its annual meeting recently at Sebastopol, where the regular business of the association was transacted. It was shown at the meeting that the association did a total business of \$126,433.82 last year, and a committee was appointed to confer with the Apple Growers' Union in an effort to combine the two associations. The subject of building a cannery was taken up, and as the contract with the Central California Canneries expires this year, it was considered advisable to take some action on the matter at once.

Hop Figures at Hand.
Figures have just been completed showing the amount of the entire crop of hops in this State during the past year, which are: Sonoma county, 35,069 bales; Mendocino county, 16,577; Sacramento, 63,198; total, 114,844 bales. Of this crop, 16,325 bales remain unsold in growers' hands, showing a movement since September last of 98,519 bales. The reports from the Bureau of Statistics at Washington, D. C., show that the crop in this country amounts to 239,000 bales, that the surplus for export purposes is

66,000 bales, and that the average imports are 38,000, which makes a total surplus of 104,000 bales. It is thought that all surplus stock will be needed before another crop is harvested.

To Fight Squirrels.
Among the estimates sent to Congress by Secretary McAdoo is one for the appropriation of \$100,000, in addition to that already available, for the further work of squirrel extermination in California. Although there has been considerable work done, both by the Government and by the farmers of the State, there are still large numbers of these rodents in the country that are yearly destroying large quantities of crops.

South San Joaquin Activity.
Work on the ditches of the South San Joaquin Irrigation District are being rushed with all possible speed, and the recent heavy rains are said to have greatly aided in the work, as they have packed down the newly made banks, making the placing of all wooden parts on more solid base, easier. The report from Ripon states that practically all of the excavating is now done and the only work to be finished is the wooden work at different places along the lines.

Various Notes.
The executive committee of the Shasta County Farmers' Protective Association will hold a meeting to take steps to make the copper company, of that section, live up to the terms of their agreement or take the matter into court with a view of shutting down the smelter.

A meeting of farmers near Elko, Nevada, was recently held with an aim to organize so that their crops will be held for the highest price, instead of being sold directly after harvesting.

MOVING ORANGE TREES, ETC.
To the Editor: I have some three year old navel orange trees to move, when do you think would be the proper time to move them? These trees are to be moved from one part of a grove to another part to replace frosted trees. Olives and peaches will be set where these trees are taken out. Had planned on moving these trees one at a time and taking up about a 100 pound ball with them, do you think 3 year old trees can be moved successfully in this manner? At what height should olive trees be headed?

Do blackberries bear on new wood only?—C. B., Terra Bella.

[The orange trees can be moved as you propose but we should take a larger ball—say 200 pounds or more if the trees have made considerable growth. Take as much dirt as two or three men can handle on a sled. If the trees have not made much growth the smaller way will do. Transplant in the spring or early summer, after the ground gets well warmed up, and you have water for irrigation, and water-settle the ground around the ball in its new place.

Olives can be headed about two feet from the ground—all exposed bark being carefully kept whitened so long as the sun strikes it.

Blackberries usually bear on wood which grew the previous season. The Himalaya acts differently in a way. Read the article by Mr. Tribble in the RURAL PRESS of January 3, page 4.—EDITOR.]

TREES

ALL VARIETIES—
FRUIT AND ORNAMENTAL

Splendid
Rains

indicate a splendid planting season and bring smiles to the faces of the growers.

Orders are rolling in fast by mail, telephone and telegraph—in fact, we are almost swamped with business, so a word to the wise should be sufficient:

Place Your Orders Now

We can supply almost anything you may wish in citrus and deciduous fruits, ornamental trees, plants, vines, evergreens, etc.

- APPLES
- APRICOTS
- PEACHES
- NECTARINES
- FIGS
- PEARS
- OLIVES
- ALMONDS
- WALNUTS
- QUINCES
- GRAPES

—in all the best varieties. Stock that is hardy and well rooted; true to name.

ORNAMENTAL
TREES AND VINES

in thousands of varieties. We can supply your wants promptly in almost any quantity.

HARDY
FIELD GROWN ROSES

in wonderful variety and magnificent specimens. If you are thinking of planting roses you should by all means buy Fancher Creek stock.

WRITE
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—listing and pricing all stock carried by us. It is handsomely illustrated and will be sent free upon request.

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NURSERIES

GEO. C. ROEDING, PRES. AND MGR.
Box 18, Fresno, California

15,000 VALENCIA ORANGES AND EUREKA LEMONS

Clean, Vigorous and Healthy

Also 1000 Placencia Perfection Walnut Trees on their own root.
You may bank on future results if you plant trees grown at Tustin where perfect soil and climatic conditions insure thrifty stock.

LAMBERT & ADAMS, Tustin, Cal.

ANAHEIM CITRUS NURSERIES

First-class Valencias, Sour Orange Seed Bed Stock.

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25,000 Eureka Lemons and Valencia Lates

There is no better one and two-year stock in the State. Our stock has never been touched by frost.
A few Perfection Placencia Walnuts on Black Roots.

MRS. A. G. WALTERS, R 3, Box 1, Anaheim, Cal.
Four blocks east of Santa Fe Depot on East Center St.

Sheepmen Say Something About It

Naturally sheep owners are not exactly comfortable about the present conversion of public affairs which relates to their industry. At the meeting of the National Wool Growers' Association in Salt Lake this month, President F. J. Hagenbarth said, among other things, these:

THE TARIFF.—For the third time in a century of national progress, the flock master is facing a period of free wool. What the present experiment will determine remains to be seen. It is not my province or desire to discuss politics, but an analysis of the tariff law discloses the fact that it is decisively an alignment of the east and south against the west. This statement cannot be better proved than to state that 80% of the products of New Jersey are on the dutiable list, whereas but 9% of the products of Arizona and 12% of the products of Nevada are so favored. The underlying principle of the present tariff act has been to favor the manufacturer and middleman on the theory that the producer is able to take care of himself. Under the new law, the grower of Merino wool will be seriously hurt, and most likely eliminated from the ranks of American industry. The mutton producer may be able to survive, but even this is problematical at this time.

SHEEP GRAZING CHARGE UNJUST.—The administration of the national forests at this date leaves but little cause for complaint. One notable exception, however, is the injustice of the respective rates charged for grazing of cattle and sheep. The ratio at the present time is about three to one; that is, one cow may be grazed on the reserves for the same price as is charged for three sheep. Cattle will consume six times as much forage as will an equal number of sheep and are twice as destructive to the range, provided always, of course, that the proper contingency is based on proper herding and handling of sheep under such regulations as are now prescribed in the national forests. We therefore earnestly contend an aggressive action should be taken by the association demanding that these rates be readjusted on a proper basis.

WATCH LAND LEASE BILL.—There has been much discussion in recent

years on the subject of land leases. Various bills, notably the Lever, Grona and Burkett lease bills, as well as the Mondell enlarged homestead bill, have been introduced in congress. We cannot evade this subject. We must meet the issue fairly and squarely and decide on a plan of action. In view of the successful operation of the national forests, there is room for hope that a practical leasing law may be enacted. We are at this time, however, unprepared to properly legislate upon the subject. The first step in this direction must be the creation by congress of a public land commission to be created along the lines proposed in the Lever bill. After withdrawal of lands from entry which it is proposed to lease, and the segregation of those areas therefrom which are susceptible to farming, and which may then be reopened to agricultural entry, there should follow a close topographical survey of the remaining grazing lands, coupled with a scientific report of the flora to be found on the grazing area, together with a thorough report as to the range customs and priority of use that have heretofore prevailed. Conditions in each of these four departments, as shown by the nature and history of the vacant public lands, show a great variance.

FOREIGN MEAT INSPECTION A FARCE.—Under the new tariff law it was provided that imported meats should be treated as domestic meats after their admission to this country. Therefore, under the rules of the bureau of animal industry all imported meat is inspected at the port of entrance, and if it is in a good state of preservation, it is stamped "U. S. inspected and passed." The inspection at the port is a farce so far as the detection of disease is concerned, and therefore to stamp such meat "U. S. inspected and passed" is merely an effort to deceive the consumer into the belief that the meat was grown in the United States and that it had been inspected by the bureau of animal industry before slaughter and at the time of slaughter. This stamp on the imported meat enables the retailer to tell the consumer that the imported meat was grown at home, for there upon it is the U. S. stamp. Imported frozen meat is not worth within 30% as much as our domestic meat, but by reason of this alliance between the meat importers and the department of agriculture, the consumer is gold-bricked out of 30% of his meat. When it comes to the products of the great steel trust the case is different. The same law that says that imported meat shall be stamped so that it will pass as domestic meat says that when cutlery and similar goods are imported they shall be plainly stamped to show the country from which they came.

The continued carrying out of the regulations of the bureau of animal industry as to stamping meat will soon make the stamp "U. S. inspected and passed" a joke in this and all other civilized countries. The law should undoubtedly be amended not only to the effect that these foreign meats should be so stamped and so known to the trade and the consumer, but we believe that the health of the consumer of the United States will be preserved by insisting that the United States bureau of animal industry shall supervise the slaughter of animals abroad, the meat of which is destined for entrance into the United States.

This is no more than is required at home, and there is no reason why the foreigner should be exempt from the same provisions.

A RESOLUTION.—After discussion the following was adopted:

"Resolved, That we, the National Wool Growers' Association, protest against the present tariff act as being unfair and sectional, as it affects our industry, and we hereby pledge this association to use all honorable means to have this law changed so that it will provide equal justice to all sections, whether framed on a revenue or protective basis."

Glanders has affected the animals on several ranches near Meridian, Sutter county. Veterinarians have been called and it is thought that the disease will soon be checked.

Live Stock Directory

SWINE.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND CHINAS—Still have a few extra nice gilts for sale at \$15 each, and one bred sow. N. M. Lester, R. 1, Gridley, Cal.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHIS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS, large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Heary, Farmington.

MULEFOOT HOGS—Best for Pacific Coast. Jno. Dunlap, Williamsport, Ohio.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH, property of Mr. and Mrs. E. C. Rand—Fine young Berkshire boars for sale, March farrow. Route 3, Box 69, Santa Rosa, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

DAIRY CATTLE.

FOR SALE—One pure-bred Holstein bull, Prince Beauty Pieterje Segis H. B. No. 84485, born Jan. 12, 1911, sired by Beauty Pieterje Prince 56435, and of the dam Belle Segis 86647. For detail information inquire of Mr. A. Sutter, 815 Wells Fargo Nevada Bank Bldg., San Francisco, Cal.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

I NOW HAVE TO OFFER a young bull born Nov. 18, 1913, sired by Acme Pontiac, whose grandsire is King of the Pontiacs, and out of a dam with a butter record of 23.905 lbs. milk 595.1 lbs. in seven days. Price \$300. J. W. Benoit, Route 2, Modesto, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

FOR SALE—35 head of registered and grade Jersey dairy cattle. Inquire of H. V. Traynham, College City, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 53, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BREEDING JACKS FOR SALE—Prices reasonable. Correspondence solicited. E. R. Elliott, Route 2, Box 57, Modesto, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Will Better Beef Feeding Pay?

We have received the following interesting letter from a reader who has had a wide experience with beef cattle and should be in a position to know what is needed, in California, at this time as well, or perhaps better, than any other man:

As will be seen the letter pertains to our article in the issue of December 27, entitled "The Alfalfa Finished Steers and Why," which was written with the idea in view of showing our readers why the alfalfa grower and the range man should co-operate in the future. From this letter it will be seen that our correspondent goes still farther than we did and advises not only alfalfa but more grain as well. He says:

"I have read your article with interest. What you say with reference to alfalfa in the finishing of steers is true so far as the State of California is concerned. As a matter of fact, however, the beef producing problem of the west is a western problem and not specifically a California problem, and for years the so-called finished beef supply of the Coast markets has been furnished largely by alfalfa fed cattle from Arizona and Nevada. The ranch conditions of these two states as well as a large part of California will undoubtedly continue, as they are at the present time and have been for a good many years, on account of peculiar climatic conditions which preclude the possibility of their more intensive use. Every year thousands and thousands of range cattle have been finished on alfalfa in the Salt River Valley of Arizona and the irrigated valleys of Nevada.

"Eleven years ago the Arizona Experiment Station, at Phoenix, sold a carload of alfalfa finished steers that brought the highest price ever paid up to that time, and that went to San Diego as Christmas beef. As to whether or not steers may be finished properly on alfalfa may depend entirely upon the definition of a finished steer. What the Coast markets have considered the finished steer has been the product of alfalfa feeding, as I have said, for perhaps the last twenty years.

"I do not know whether or not your attention has been called to the note that was given to the press recently concerning the co-operative feeding work that is being carried on by the Western Meat Company and the University of California at Lovelock, Nevada, at the present time. Something over 1700 head of steers are there being fed on different grain rations supplementing alfalfa hay. This marks, I believe, the first move in a break from the old method of finishing steers which you have referred to in your article as being new, and which is new only as a California and not as a Coast proposition.

"I am inclined to think that your prophecy with reference to the future growth and finishing of cattle from the California ranges is true only in part. Alfalfa will play a most important part in finishing these cattle, but I am inclined to think that the time has come when the feeding of grain in addition to this will be justified. This belief is suggested by the fact that the Western Meat Company have started the feeding of grain in connection with alfalfa as a business proposition this year. In your article you refer to the matter of growing beef from calfhood to finish on irrigated ranches. It is my hope that some one may establish

herds of beef cattle to be managed in just this way, in order that such questions may be more intelligently answered."

[Communications like the above are of immense value to everyone interested in the Live Stock industry of the State and we should be pleased to receive more of them from our readers, many of whom we are sure have views on the subject which should be more widely known. The subject is one of such magnitude that it will require much time, study, and experimenting, before it will be generally practiced, and the sooner we get at it through printed opinions the sooner we will arrive at some definite plan.—EDITOR.]

HOW TO TAN A CALF HIDE.

To the Editor: Can you tell me how to tan a dry calf hide for a mat?—A. C. T., Fallon, Nevada.

[The first work of curing hides is to see that they are properly trimmed, as the shape of a hide used as you wish to, has much to do with it.

To properly trim them the forelegs should be taken off above the knees, the hindlegs at the second joint or hock, tail cut off within two inches of the body, forehead, lips, ears, etc., should come off, or any other useless long pieces on any part of the hide. All flesh and fat should be removed, the hair side should be swept clean of all dirt, the flesh side should be washed with warm water to remove blood, etc., before salting.

After the above processes have been done the hide should be salted evenly all over, using about 12 to 18 pounds of coarse salt according to the size of the hide. Special care should be exercised to see that every part of the hide is exposed to the action of the salt. Perhaps the best way to cure small lots is to place the hides on the floor, allow to cool, then salt evenly. Leave for six hours to thoroughly cool, then fold the hide in halves, head to tail, sprinkling a little salt on the hair side next to the points and tail. By this means the flesh side does not come into contact with dirt and blood on the hair side. They should be left folded for from seven to ten days, after which they may be taken up and swept clean, and any further trimming done as required.—Editor.]

MOLASSES FOR HOG FEED.

To the Editor: Would you kindly advise me, through your paper, the value of crude molasses for hog feed, to be fed with alfalfa meal and ground Egyptian corn? Where can it be obtained and is it very expensive?—HOG RAISER, Turlock.

[If you wish comparative data, as to the value of molasses, we cannot give it to you as we have none at hand. As we have said before, in these columns, there is very little known of molasses in this State, as it has been a hard thing to get hold of except in exceptional cases where someone has a contract with the sugar companies for a large amount each month.

We know of several farmers, in Stanislaus county, who have used molasses for hog feed with a great deal of success, but they have not fed it as you suggest. Usually it is fed in connection with skim milk and alfalfa pasture, it taking the place of grain in these cases, as it is very rich in

carbohydrates and therefore helps to balance the ration of other feeds containing large percentage of protein.

You can, we believe, purchase molasses at the present time from the Grange Company, at Modesto, although we are not sure how much of a supply they have, or the price that they charge for it. It has been sold for about 12 cents a gallon, heretofore, in that section. This is a heavy kind which can be thinned considerably with water before using.

From what we have seen of molasses we believe that it will be a big thing for the stock men of the State if the time ever comes when the supply can be depended upon, which we under-

stand will not be before another year or so.—EDITOR.]

IMPORTED SHIRES

We offer for sale young mares and stallions from some of the best stock in England. Ages range from 1 to 4 years. These are all good individuals, and every one is absolutely sound. We also have saddle horses and driving stock for sale.

Correspondence and inspection of stock invited.

BLACK HAWK RANCH

Burlingame, Cal.

A. W. Ward, Superintendent.

Phone 131.

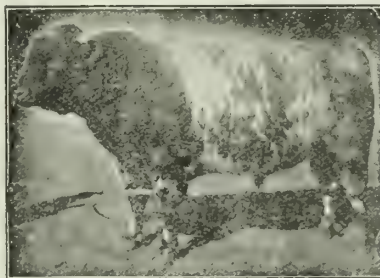
HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.

BREEDER OF

SHORT-HORN CATTLE SHROPSHIRE and MERINO SHEEP

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.



KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Belgian Stallions

Have for sale Bay 4-year-old, weighs 1950 in ordinary condition; took first premium at 1913 State Fair; his dam imported mare Rosebud, weighs 2318 lb.; took first premium and gold medal sweepstakes at 1913 State Fair.; sired by imported stallion Derby. Have at my place 30 colts by this stallion. A proven sure getter of fine foals. Also a sorrel 3-year-old, weighs 2000; will weigh 2300 when mature. His dam imported mare Lizzie de More; took second premium at 1913 State Fair as an individual; first premium as mare and colt, and first for mare and two colts under 4 years; sired by Derby. Prices reasonable and will make terms that will allow purchaser to earn good part of purchase price with the stallions. Call at my place and see these fine young stallions and their get.

H. L. WEST, Hamilton, Cal.

Salvador Stock Farm Shire Horses

Don't Sign That Note for \$3000

I will sell you a better horse for half the money.



HENRY WHEATLEY,
NAPA, CAL.

America's Leading Horse Importers

PERCHERONS

Our recent importation arrived at our Oakland Stables December 13th. At the International Live Stock Exposition, Chicago, December, 1913, our stallions won two Gold Medals; two Championship Ribbons; two Second Prize Ribbons. There were over 600 Percherons at this great show.

If you want the best, let us hear from you.

McLAUGHLIN PERCHERON
COMPANY

Kansas City, Mo.

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With the Live Stock Men.

H. A. Jastro, of Bakersfield, was re-elected president of the American Live Stock Association, at their annual convention held, at Denver, during the past month.

A demonstration was held, at Tulare, last week with a tuberculin infested cow for the benefit of farmers and high school students. The animal was killed and a post mortem held in order to show what the carcass looked like.

A report from Portola, Plumas county, says that dairymen, in the Sierra Valley, have been experimenting with different colored milk bottles in an effort to find out whether there was any difference in the keeping qualities of milk bottled in red bottles, over that bottled in plain white glass bottles. The report states, that they found, that milk in the red bottles kept sweet longer than in anything else, and may use colored bottles in the future.

In a communication to this office, R. R. Cartwright, of Angels Camp, Calaveras county, writes that he may sell his entire herd of Red Polled cattle the coming season.

W. E. Barnard, of Butte county, writes us that he has recently purchased 30 head of registered Duroc Jersey hogs, from Bert Armstrong, a Nebraska hog fancier, and intends to go into the hog business on a modern, up-to-date, scale. His herd is headed by Red Wonder, whose father is the well known prize winner Ohio Chief. He says that he expects to build a modern hog house in a short time.

Ben Cameron recently purchased 135 head of extra fine beef cattle from Peterson Bros., of Fort Bidwell. The cattle were driven to the Willow ranch.

A report from Winnemucca, Nevada, states that James Corbell has recently returned from a trip into the Pine Forest range, where he found the sheep in good condition and stated that they would very likely go through the winter in good condition.

The Bell herd of dairy cattle, sold recently at Modesto at public auction, brought a good average price and several of them went for more than \$100 a head.

The King Drayage company, of San Francisco, have purchased and shipped six fine draft horses from R. J. Power, of Colusa, during the past month.

We have a letter from R. N. Gunstall, of Gurneyville, Sonoma county, in which he says: "A short time ago I was in the market for a pure bred bull. I answered several of your advertisements, which brought the desired results." As we have letters at hand from a number of breeders who say that they have had excellent results from their announcements in our columns during the past year, we cannot help but believe that the Rural Press is a good medium for the man who has purebred stock for sale.

It is reported that the Los Canado Dairy, at Chowchilla, Madera county, will increase their herd in a short time, to 300 or 400 cows. The report also says that there will be several other dairies started in that section in a short time.

S. E. Robinson, of Imperial Valley,

reports that he has been having some trouble with hog cholera and is finding vaccination with serum quite effective.

R. M. Taylor, of Paradise Valley, Nevada, recently purchased a purebred Poland-China boar from the University of Nevada, at Reno, Nevada. The University at that place has been a big factor in the building up of stock, in that State, as it was almost a pioneer in the purebred business there.

Live Stock receipts were less for the week and business not so brisk, at the Portland Union Stock Yards, last week. The bulk of the week's steer sales averaged \$7.00 to \$7.25, and cows \$6.00 to \$6.25. Other beef business was slow and prices were weak, on account of poor quality and too much of it. Good prime finished pigs and smooth heavy stuff found a ready sale at around \$8.00, but some inferior stuff sold for less. Receipts of hogs were about 2,000 less than for last week. The total arrivals for sheep were smaller than for the week previous. Wethers sold at \$5.85, and ewes at \$4.75 "off cars." Fancy lambs brought \$6.50 with no over supply. All mutton lines were on a 10 to 15 cent decline at the end of the week.

Mrs. Zumwalt, of Visalia, has shipped 220 head of cattle, to be ranged on her property in the White River district. It is said that there will be a great many cattle shipped into that section this year, as the feed is exceptionally good.

M. B. Johnson, of Winnemucca, Nevada, recently received a registered boar from the State of Missouri.

Antone Frietas, a dairyman near San Jose, who was charged with selling watered milk, plead guilty in court last week and was fined \$50. The fine was made light on the recommendation of the State Dairy Inspector, as the defendant had never before caused trouble and he stated that he believed Frietas himself had not done the watering.

The firm of Hayes and Devaney, of Livermore, are shipping large numbers of Mexican cattle, into this State at the present time, from points in Sonora, Mexico. Most of the stock has been sold to cattlemen in the Livermore hills section and San Joaquin county.

A good opportunity for cattlemen to purchase either range bulls or bulls for purebred herds is being offered by Tom Gibson, of Woodland, as will be seen in his announcement in another column.

At a recent meeting of the American Mulefoot Hog Record Association, John H. Dunlap, of Williamsport, Ohio, was elected president, for the coming year. Mr. Dunlap is the largest breeder of this hog in the country and has done much toward the developing and advertising the breed. His position on the Live Stock Board of the Panama-Pacific Exposition, to be held in this city in 1915, assures a good showing of that breed here at that time.

In a communication to this office from C. M. Winslow, Sect'y of the Ayrshire Breeders Association, he states

that the annual meeting of that association was held in New York, January 8.

A. B. Smith, manager of the Fuller ranch, in Imperial county, states that he will put up and fatten 700 head of steers, for the market. They will be finished on alfalfa hay and corn.

U. M. Slater, president of the Nevada Packing company, at Fallon, Nevada, recently stated that his company is fattening cattle on a ration of hay, grain and beet pulp, for an average of 10 cents, per day per head.

MAKES A RECORD PRICE.

A dispatch this week from Paris says: Edmond Perier of the French Institute is authority for the statement that a noted British entomological collector has paid \$5,000 for a specimen of a rare variety of flea. It is of the kind occasionally found in the fur of the sea otter.

Blake, Moffitt & Towne

Dealers 37 FIRST ST., SAN FRANCISCO.
In Blake, Moffitt & Towne, Los Angeles
PAPER Blake, McFall & Co., Portland, Ore

Read This Letter

Ambrosia Cream Co.,
Napa, Cal., Nov. 14, 1913.

De Laval Dairy Supply Co.,
San Francisco, Cal.

Gentlemen:

The silo that I purchased from you this year has proven to be very satisfactory and want to compliment you on the good clear 2 x 6 Redwood staves that you used in the manufacture of the same. There is no question as to the Ideal Green Feed Silo being superior to the re-sawed or home-made silos, as it is absolutely air-tight and is manufactured from first-class material throughout.

In erecting my silo I did not use either a hammer or saw except for the staging. I have been feeding out of the silo for several months now, and have yet to find any spoiled ensilage. No dairyman who expects to get the full results from his cows can afford to be without a silo, and from my experience with different silos, I am convinced that your Ideal Green Feed Silo is far superior to any other kind.

Yours very truly,

H. I. MIDDLETON.

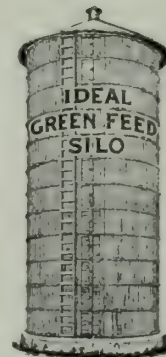
Write for silo catalog B for full information.

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THE HINMAN MILKING MACHINE

Is fast gaining favor. 2381 machines sold in 1913.



The machine that is remarkable for its simplicity, reliability and reasonable cost.

C. W. Ginn of Corcoran is milking 75 cows. Read what he says:

Corcoran Jan 7, 1914.

Mr. C. F. Daniells,

Dear Sir: I consider my Hinman investment one of the best I have ever made.

Yours truly,
C. W. GINN.

C. F. DANIELLS & SON, Modesto, Cal.,
AGENTS FOR CALIFORNIA AND OREGON

YOUNG JACK FOR SALE

MOGUL GIANT, winner first prize, California State Fair, 1913. Foaled August 23, 1911.

Sire, Baby Giant, 3933, bred and raised in Missouri, 16½ hands high, weight 1242 pounds.

Dam, Maggie, 5120, bred and raised in Missouri, 15½ hands high, weight, 1150, awarded first prize California State Fair 1913.

This jack is black with white points, very heavy bone, good action, good conformation, is well broken to mares and is a quick server, will, when matured, be 16 to 16½ hands high and weigh between 1200 and 1250. I guarantee him to be a sure breeder. Photo and price on application. Have some very good young jennets for sale.

W. J. GREER, Edenvale, Santa Clara County, Cal.

Breeders' Sales.

[This column is open to pure-bred breeders of all classes of live stock and is run as often as we have a sufficient number to warrant the space. Those having made sales are requested to send us the name of the animal, registration number, and name and address of purchaser. When such sales are reported we will gladly give them mention free of charge. The following sales have been reported since our last issue containing this column.]

JERSEY CATTLE.

N. H. Locke Co., Lockeford, sold to Hillier Jersey Farm, Modesto, first prize calf, California State Fair, Leda's Laddie of L. 115737; to J. K. Nay, Lodi, Midget's Fox of Lockeford 115739; to Frank Beckley, Colusi, Fox's Valet of L. 115733; to E. H. Church, Guernsey, Kitty's 2nd Valet of L. 115732; to B. E. Sundin, Reno, Nevada, Foxy King of Lockeford 99218; to R. L. Waltz, Hanford, The Imp. of L. 107508; to H. H. Favour, Thalheim, Valet's Peter of L. 115734.

HOLSTEIN CATTLE.

R. F. Guerin, Visalia, sold to W. F. Mitchell, Visalia, Princess Evylin Wayne Hengerveld, Dora Korndyke Hengerveld, Gleeson Countess Elnora, Maud Pariare Queen, Apple Blossom Zampa 2nd, Apple Blossom Zampa 3rd, Twilight Shadow of Sunnyside, La Mona Hengerveld of Sunnyside, Lady Lorena of Sunnyside, Juliana of Sunnyside; to Geo. A. Smith, Corcoran, Prima Donna of Sunnyside, Olivia Princess Hengerveld, Golden

West Hengerveld, Alta Reva Hengerveld, Lovely Lady Hengerveld, Rosamond Lee Hengerveld, Princess Una Hengerveld, Cantate Sunrise Hengerveld, Hazel Katrina Hengerveld, Cantate Wonder 2nd, Consolation of Sunnyside, Pomona of Sunnyside; to J. T. Clark, Tulare, Autumn King.

GUERNSEYS.

R. F. Guerin, Visalia, sold to Crescent Creamery Co., Los Angeles, Norbeth 24341; to E. P. Skidmore, Tulare, Rival's Prince 26160; to M. F. Neff, Biggs, King of Clovernook 12554; to Cottle & Hobson, Amsterdam, Grape Wild Farm Prince 24342; to F. Sinclair, Agassiz, B. C., Mayor of Mayhew.

POLAND-CHINA SWINE.

A. M. Henry, Farmington, sold 1 boar to J. W. Boggs, Lakeport; 1 boar to Eagle Shawmut Mining Co., Shawmut; 2 boars to C. M. Crawford, District Attorney Lake County; 1 boar to A. E. Dambacher, Cottonwood; 1 sow to R. D. von Glahn, Ripon; 2 sows to C. E. Buckley, Hopeton; 2 sows to W. D. Rankins, Manteca.

DUROC-JERSEY SWINE.

Linguist Bros., Turlock, sold to Kerney Vineyard Co., Fresno, Maud B. 363542; to F. J. Martin, Yuma, Arizona, Rose B. 363540, and Queen's Fancy 363980; to C. A. Natcher, Turlock, 1 service boar; to C. J. Nunes, Turlock, 1 service boar; to C. A. Mitchell, Glenn, 1 boar pig; to E. E. Johnson, Turlock, 1 boar pig; to Christianson Bros., Turlock, 1 service boar.

BERKSHIRES.

A. B. Humphrey, Mayhews, sold to Pan American Hardware Co., Jerico, Mexico, Superior Lord Belle 184366, Stars Superior Duchess 2nd 184369; to Club Stables, Honolulu, Hawaii, Silver Star 7th 184371, Silver Star 8th 184372, Bernice Star H. 184375, Grape Wild Rival 184374, Prince Superior 4th 184365, Star Princess 19th 184364, Grape Wild Black Prince 184363; to C. E. Mack, Elk Grove, Superior Duke 2nd 184964; to W. G. Robson, Grass Valley, Silver Star Duke 4th 184962; to W. S. Parks, Los Vegas, Nevada, Grape Wild Gem 184365, Silver Star 6th 184375; to W. S. Kendall, Sacramento, Ingleside Star 186028; to Mayo Bros., Montgomery Creek, Gems Fashion 186031, May Fashion 2nd 186697; to Hawaii Meat Co., Honolulu, Hawaii, Superior Duke 3rd 186034, Superior Duke 4th 186033; to Louis Titus, Tracy, Prince Superior 3rd 179727; to E. F. Anderson, Modesto, Champion Star Duke 184370; to J. A. Burroughs, Delano, Master's Kern Queen; to Robt. McCay, Sacramento, Longfellow's Gem.

NEVADA JERSEY BREEDER SUCCESSFUL.

Certain sections of the State of Nevada and more especially the district embraced in the Truckee-Carson Irrigation project are making great headway along dairy lines.

In the past, dairying, in that State,

has been retarded, to a large degree, by a lack of sufficient irrigable alfalfa land but the development of water in more recent years has overcome that phase of the situation.

That this is creating a demand for purebred sires is indicated in a letter from F. E. Mobley, of Fallon, Nevada, to this office in which he says:

"Another dairyman has started right. Mr. C. G. Swingle, of Hazen, Nev., has just purchased 'Regina's Financier' from me to place at the head of his herd of Jerseys.

"'Regina's Financier' is a nine-months' old son of 'Financier of Laurel Farm.' His dam is a daughter of 'Financial King,' and his sire is a double grandson of 'Financial King,' thus imparting fifty per cent of 'Financial King' blood, to this young bull.

In addition to this he carries twelve and one-half per cent of 'Flying Fox' blood. Harry Jenkins, the Jersey expert, says: 'It does not need fifty per cent 'Financial King' blood to make a good cow. Just a quarter or an eighth fills the pail and more—runs it over.'

"Just think of Mr. Swingle's future grades, each carrying 25 per cent of 'Financial King' blood, six and a quarter per cent of 'Flying Fox.' Will it pay him, do you think? I say yes! We expect in a very few years to show both the best grades and the best registered Jerseys in the United States. Nevada is the natural home of the Jersey and we congratulate C. G. Swingle on his wise choice."

The Layne & Bowler System

Puts an End to Experimentation Because of Its

PRACTICABILITY

The Layne & Bowler System has met the many requirements of the western irrigator and has proven its practicability time and time again.

EFFICIENCY

The highest efficiency has been attained after 8 years of perfecting. Where this System is installed, experimentation ceases and your troublesome irrigating problems solved.

SAND ELIMINATION

The Layne & Bowler Patent Oil and Water Well Screen will positively eliminate your sand trouble. It cannot clog or choke.

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Write our irrigation and water experts for free advice. Send today for Catalog No. 25, which tells all about the development of the Layne & Bowler System and the story of the successful users. "Let the World's Largest Water Developers Solve Your Pumping Problems."

The Layne & Bowler Corporation
900-910 Santa Fe Avenue, Los Angeles

DURABILITY

Nothing is slighted in the construction of these pumps. They are well housed and compact, to withstand the wear and strain they are subjected to.

SIMPLICITY

The dangerous well pit is eliminated, all adjusting is done on top of the ground and as few working parts as possible are used.

SATISFACTION

Built for your particular needs—getting maximum production at minimum cost—ending your pumping difficulties—The Layne & Bowler System gives the greatest satisfaction possible.

Dead Squirrels Dead Gophers Better Crops

KILMOL
SQUIRLOPHONE

used with the U. S. SQUIRREL DESTRUCTOR, will kill every squirrel on your farm and thus end their crop destruction.

KILMOL costs less than **ONE** cent in money
FOR EACH SQUIRREL BURROW TREATED

No Experiment

KILMOL is thoroughly practical. These concerns, all large land owners, are using KILMOL in great quantities: Natomas Consolidated; Santa Fe Ry.; Southern Pacific Ry.; Miller & Lux; Spring Valley Water Co.; Barton Vineyard Co.; Calif. Hawaiian Sugar Refining Co.; Calif. Wine Association; Crocker-Huffman Land & Water Co.; Italian-Swiss Colony; Leland Stanford University; Simon Newman Co.; Peoples Water Co.; and many others too numerous to mention.

Government

Inspectors are using KILMOL in the SQUIRREL DESTRUCTOR in a great many sections of California, which is the best recommendation possible.

Every Day

in the year, wet or dry, KILMOL can be used. Weather makes no difference.

100% Efficient

The squirrel cannot escape. Failure is impossible.

Free

It costs you nothing to learn all about this wonderful method—the best ever discovered for killing squirrels and gophers. Let me prove these statements. Send to-day for particulars.

Herbert F. Dugan, Dept. C8

1170 Sutter St., San Francisco

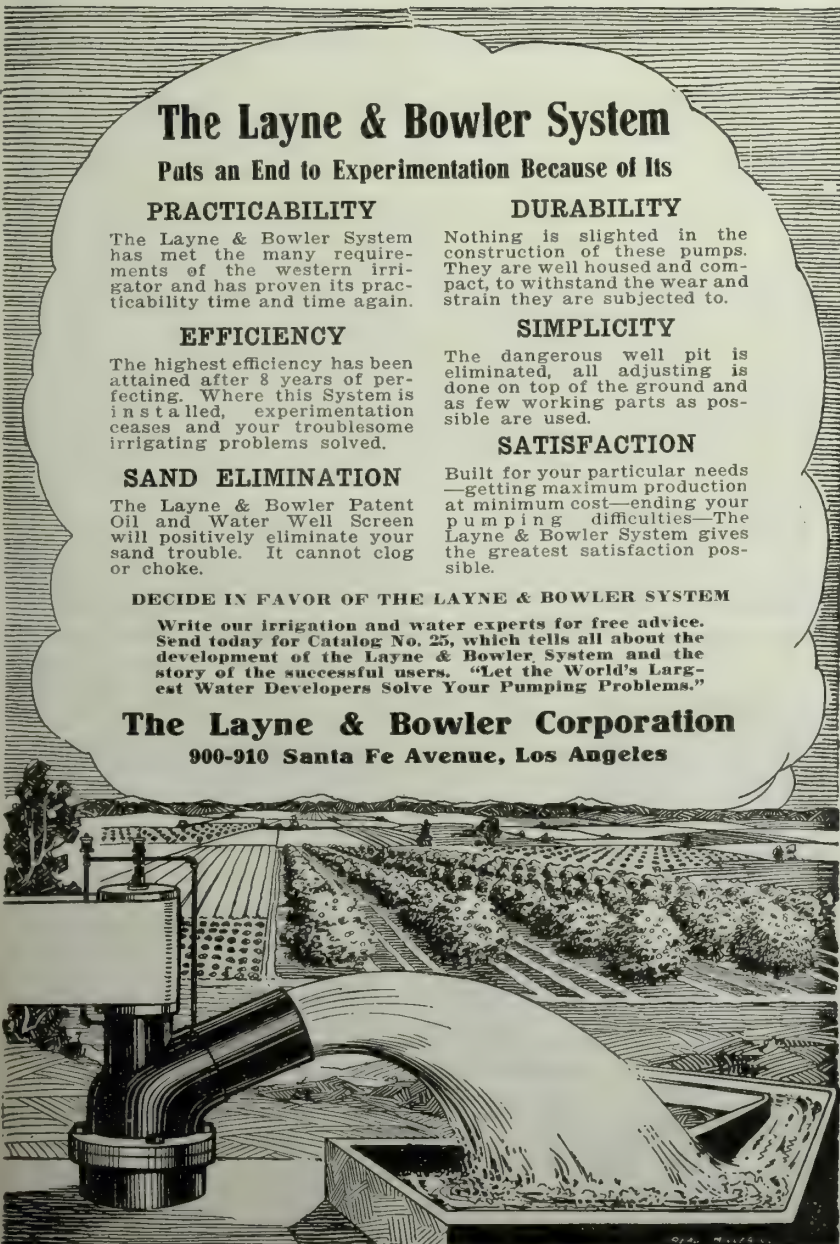
5 gallons Kilmol to-day is worth \$100.00 in crops to-morrow

I can also supply you with Strchnine or Barley poisoned according to Government formula. Write for prices.



Kilmol Vapor

Fills Burrow



Veterinary Notes.

[ANSWERED BY DR. CHAS. C. WING, SAN FRANCISCO VETERINARY COLLEGE.]

To the Editor: I have a mare due to foal March 1, that has catarrh or nasal gleet. I think now that she had it slightly last spring but did not pay any attention to it, as most horses cough occasionally, but after the early rains last fall she got worse and at times there was a white discharge from her nose.

She coughs and blows her nose a great deal now. Have had her treated by a veterinary for five weeks, but don't seem to do much if any good. She is sleek and fat and has a good appetite. I would be thankful for good advice how to cure her.—Reader, Modesto.

This discharge could be caused by actinomycosis of the bones of the head and again it could be an ulcerated tooth. Try steaming the horse by placing a nose bag over the nostrils and steam with eucalyptus oil, one part, and water five parts. Follow this treatment once a day.

HORSE WITH ITCH.

To the Editor: I have a two year old colt that has been out on pasture. About a week ago I noticed that in walking, it crosses its front feet, that is, it raises its right foot and places it across the left and the same with the left. It has a slight barb wire flesh wound, below the ankle of the right foot, but I do not think that would cause it. The hind legs also seem to be slightly affected the past few days.

I also have a mare about 15 years old, that seems to have some sort of an itch, but I have found no signs of vermin. She has rubbed the hair and skin off her neck and legs in large patches. Could you give me any idea as to the ailments?—Subscriber, Milpitas.

I would advise having a graduate Veterinarian examine the first horse, as the symptoms are not complete. The second case is characteristic of a parasitic invasion. Use following: Olive oil 8 ounces, Oil of Tar 2 ounces, Oil of Mirbane 1 dram. Apply to parts once daily.

PREVENTIVE FOR MILK FEVER.

To the Editor: Would you please tell me the cause and how to prevent a cow from getting the milk fever. I have a fine Jersey cow, a big milker, which had the milk fever with her fifth and sixth calf in spite of giving her the best of care.

I have been told that after she had the milk fever once, that she would have it with every calf and also that her udder would be ruined. Kindly give your advice on this matter and if there is such a thing as a preventive kindly publish it in the Rural Press.—An Old Subscriber, Santa Clara.

Milk fever is caused by blood rushing to the udder that supplied the calf while the cow carried it. There are cows that hold so much blood in the udder that it leaves the brain and other parts of the body without enough to supply the tissues, thereby causing a paralysis.

The treatment consists of inflating the udder with oxygen and administering a heart stimulant, which should be given with a hypodermic syringe, as the tongue may be paralyzed and the animal unable to swallow.

low the medicine, if given by the mouth and you would cause mechanical pneumonia.

Prevention consists of keeping the bowels open before calving and giving of plenty of exercise.

HOG WITH DEPRAVED APPETITE.

To the Editor: I have an aged sow that is due to farrow in about 10 days. Since she first began to sow for the litter she has had difficulty in breathing, which has become more aggravated lately. Except for this, she seemingly has had good health and has had a good appetite until the last three days. Since then I cannot get her to eat anything. She continually roots up and eats dirt and her manure is composed entirely of dirt and small stones. She has been fed a ration of pumpkins and corn with skim milk to drink and free access to water. She has always done exceptionally well with her previous litters and have never had any trouble before.—I. A. B., Delano.

This is due to a depraved condition of the system called Pica, and is often found in cows and cattle that have been bred several times.

There is a certain salt that the system craves and the animal eats dirt and filth in search of the different salts that are lacking.

Don't breed next time and give the following: Sodium Phosphate 8 ounces, Sodium Chloride 4 ounces, Calcium Phosphate 4 ounces. Mix well and give two tablespoonsful in feed, three times a day. Advise giving four ounces of Epsom salts first to clean the bowels. Keep animal away from all dirt in clean pen with wooden floor. Your feed is alright with addition of some grain.

SWELLING AROUND THE JAW.

To the Editor: I have a large mare that had swelling appear around her jaws, next to her throat, and also her throat was badly swollen, which I suppose was caused from a bad cold or distemper. I poulticed it for several days and it finally bursted and has been a running sore ever since. This was about eight months ago, when it first began to run, and I have tried several remedies to try and heal it, but it does not seem to heal.

Will you kindly tell me, through the columns of your paper, what I can use to stop the pus and heal the sore? The pus that comes from this sore smells very bad, otherwise the mare seems to be in perfect health.—F. L. C., Groveland.

There is a piece of dead tissue there, that should be removed. If the opening is large enough, insert your fingers and go to the bottom of the cavity and tear carefully, or again there may be a pocket some place, that needs to be lanced, in which case a licensed veterinarian should be called as there are several important blood vessels and nerves in this region.

CANKER OF THE FEET.

To the Editor: I have a mare 13 years old that has canker in both front feet. I first noticed it last September, and thing perhaps it started two or three months before. I have had two of the best veterinarians in this county, and both pronounced it "Canker," and treated her for it, but she is no better now than when they com-

menced. Is there a cure for it and if so what is it?—T. W. C. Lodi.

Canker of the feet is a bacterial origin and the infection will spread to all four feet, if not watched carefully. This disease is successfully treated by carefully cleansing the stall floor and keeping it clean and dry and using a strong disinfectant, such as Chloride of Lime, sprinkle about the floor. Use a 4 per cent solution of Formaldehyde, to wash out the foot twice daily, getting the solution well into the cracks. Even under this treatment it takes some time to cure this disease.

CANCEROUS GROWTH IN FOOT.

To the Editor: I have a mare with a fungus growth or cancerous growth in one of her front feet. It has eaten half of the sole away. I have seen a Veterinarian, but he did not think he could do anything for it. The mare is

in foal. Will you kindly inform me if such a disease can be cured and what to do for it.—H. S., Ceres.

[ANSWERED BY E. J. CREELY, SAN FRANCISCO VETERINARY COLLEGE.—There are numerous fungus growths, some are malignant and others are not. I would have to know whether or not it is in the vicinity of the joint or an important tendon. Use the following until you can send me more important symptoms: Rx. Churchill's Tinct. Iodine 8 ounces, Turpentine 2 ounces, Oil Rosemary 1½ ounces, Carbolic Acid ½ ounce. Mix, saturate cotton and bandage.]

S. L. Hanscomb, of Chico, recently exchanged his ranch of 300 acres to W. S. Heywood, of Alameda county, who it is claimed expects to establish a modern ranch and also stock it with purebred cattle.

Bulls For Sale

60 HEAD SHORTHORN BULLS

Highly Bred, Well Developed
Individuals in Good Condition

This bunch contains 3 registered bulls in every way fit for
herd-headers.

PRICES RIGHT

For further particulars enquire

ROSELAWN STOCK FARM

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T. B. GIBSON, Owner.

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

A. W. MORRIS & SONS CORP.

Holstein-Friesian Cattle

Woodland, Cal.

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes
For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.



PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

Benefits of Erecting Silos in the Spring.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Everywhere we are informed that this is to be a silo year, in California, not only on dairy ranches, but on many ranches where beef cattle feeding is done.

This speaks well for the silo, as in most cases those that are built this year will be the result of actual experiences with silos the past fall and winter, and it should be said that those who built a good silo last year and filled it properly are now its most loyal supporters.

Primarily, most of the silos erected last year were for corn ensilage as that is considered the best by most feeders, but it has often been found that other things can be profitably put through the silo, among them being our old standby, alfalfa.

The greatest loss experienced from alfalfa fields, in the past, has been the first crop, as in districts that were badly infected with weeds such as fox tail, it has been almost a total waste, and just how to overcome this loss has been a serious problem. In this respect the silo fills into the general scheme better than anything else so far found, as by the time that the first crop of hay is ready to cut the corn ensilage has usually been fed out and leaves the silo empty to convert the almost worthless weed infected hay into first class feed.

On one large dairy which was recently visited the owner stated that he had owned two large silos for several years, but had never used them for any other purpose than to silo his first crop of alfalfa, as otherwise the first crop from his 300 acre ranch was almost entirely wasted. When asked why he did not use corn he stated that he had not been able to successfully grow it on his land but that he would not be without a silo as long as alfalfa was grown on the place. He also said that by siloing the crop he considered that he saved a great deal by siloing his crop as in that way he did away with all weed seed sowing which ordinarily takes place when the dry hay is fed.

Where corn can be successfully grown there is naturally a bigger field for the silo as it can be used almost the entire year for in most sections where corn has been used for ensilage it does not ripen until the early fall or winter months which allows ample time for the feeding of the alfalfa silage, and it is only a short time until

the new corn silage is ready to feed.

An objection very often heard to the silo is that land planted to alfalfa will produce more feed than that planted to corn but it has been found that by growing a crop of grain hay on the land before the corn is planted the net results from the land usually run in excess to the alfalfa crop.

In planning the erection of a silo the cost of building and that of filling machinery are always of prime importance, on the average farm. For those unacquainted with the expense to be expected it should be said that the cost of the filler and engine are in most cases more than the cost of the silo itself, unless concrete is used for building, in which case they are about evenly balanced. Cutters come at different prices, according to the size and the make, but one with a capacity of from 5 to 9 tons an hour can be purchased for about \$200 in San Francisco. For a cutter this size a ten horse power engine is needed which will also vary in price according to make, one concern who puts out a good serviceable one charging \$450.

To charge the silo with the total overhead expense of the cutter and filler is not fair, however, as the engine can usually be used in many other ways, on the farm, and the cutter can be used very profitably in chopping the alfalfa hay before it is fed.

The cost of the silo itself depends upon the material used in building, concrete quite naturally being the most expensive but also the most lasting.

Next in cost comes the more modern stave silo which has been introduced in the State during the past year. These are made of two by six redwood boards with a half inch tongue and groove. The ends of the staves are square and when joints are necessary, steel splines are used which fit into the bottom of one stave and into the top of the other and in that way make a thoroughly tight joint and one that is never able to shrink. Such a silo, 16 feet in diameter and 24 feet high with a capacity of 86 tons costs about \$508 complete with roof and ready to erect which work can be done by the farmer himself at little or no cost. One of the advantages of this silo is that the tenant farmer can erect them and when his lease expires he can remove it to another place with little expense. For this reason the stave silo should become a great thing for the tenant as well as the man who owns his land, as there are not many renters who would care to build any of the other kinds of silos to leave on the ranch after his lease expires.

The other style of silo which has become very popular on many of the dairies is the resaw and studded silo which is usually erected by the farmer himself or by hired carpenters and varies in cost from one dollar to two dollars a ton.

From this it will be seen that there is no cheaper kind of storage room, that one can build, than a silo as the cost of other buildings, with as much space available, would cost considerably more.

It would almost seem advisable for the farmer who expects to build a silo this year to lay immediate plans for it in order that he may get the returns from the first crop of alfalfa as well as the corn crop later in the year.

CLASSIFIED ADVERTISEMENTS.

Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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SURPLUS UMBRELLA, APPLE, CAL. BLACK WALNUT TREES.
4000 TEXAS UMBRELLAS, all grades to twelve feet, straight stemmed and branched.

8000 YEARLING APPLES, 4 to 6 and 6 to 8 feet. Absolutely free from aphids and gilt edge in every particular. Spitzenberg, N. Y. Pippin, Yel. Bellflower, Baldwin, Winesap, Rome Beauty, Wagener, Ben Davis, Red Astrachan, White Astrachan, Gravenstein, Alexander.

10,000 CAL. BLACK WALNUT, one and two years. All stock has roots well branched. Prompt delivery and special attention to trade orders. Will exchange for small ornamentals suitable for lining out in nursery.

JOHN L. AMES, Live Oak, Cal.

FANCY CITRUS TREES, selected field stock, irrigated fortnightly, at least 15 hours per row, without exception, never frosted, buds as select as possible. Inspection and comparison of buds or stock in character or ancestry solicited.

COMMERCIAL CITRUS TREES, at bedrock prices, with attention to large orders.

SEED BED STOCK, FLORIDA SOUR

and **NATIVE SWEET** from a bed covering an acre, cheerfully compared with the extra select anywhere, at very low prices. O. E. VAN SLYKE, 620 Foothill Boulevard, Azusa, Cal. Phone 476.

CITRUS TREES—Washington Navels 1/2 to 3/4 in., 70c; Washington Navels, 3/4 to 1 1/4 in., 80c; Valencia, 1/2 to 3/4 in., 75c; Valencia, 3/4 to 1 1/4 in., 85c; Eureka Lemons, 1/2 to 3/4 in., 75c; Eureka Lemons, 3/4 to 1 1/4 in., 85c; Grape Fruit, 1/2 to 3/4 in., 80c; Grape Fruit, 3/4 to 1 1/4 in., 90c. Above prices are for Balled Trees f.o.b. Glendora; 5c less packed in moss. Order any kind of tree you like and I will furnish same. Florida Sour and native sweet seed-bed stock. One-third cash must accompany all orders. W. O. West, Glendora, Cal.

GRAFTED WALNUTS.

Our Franquette nuts bring \$100 more per ton than the best Santa Barbara walnuts. Our selected Royal roots grow 50% faster and sturdier than the average California root. It took US ten years to develop this combination. It is at YOUR immediate disposal. Write for catalogue and prices to Imperial Walnut Nursery, R. F. D. 7, San Jose, Cal. Practically sold out of Franquettes, but have a few choice Eureka left.

WALNUT TREES WITH AN ANCESTRY—Placencia Perfection, Black Root. Scions taken from trees that have had the following requirements for the past four years. Heavy crop, smooth large nuts, rapid growth, symmetry and absolutely free from disease. Some 18 feet high. All this year's growth. Valencia, Navels, sour seed bed stock. Commercial species of Eucalyptus in quantities. Cerro Villa Nursery at Villa Park. Address Hugh T. Thompson, Orange, Cal.

HUNISA—The new grape. This grape will in a few years take its place with the Tokay, Malaga and Emperor as the leading shipping grape. Have a few thousand cuttings for sale. Write for prices. C. B. Cunningham, Mills, Cal.

STANDARD PRUNE grafting wood, 20c per foot, from trees that supplied the prunes for the Burbank Co. to make their standard prune exhibit at both the State Fair and Land Show this fall. D. W. MILLER, Linden, Cal.

ALMOND GROWERS, ATTENTION—I want about one thousand sound soft-shell almonds. Must be this season's crop and cheap. Advise quality and price. F. L. STARKWEATHER, 2426 Bowditch St., Berkeley, Cal.

2000 Bartlett Pears, 4-6 ft., 10c each. 500 each Arkansas Blacks, Winesaps, Spitzenbergs, Yellow Newtown Pippins, 4-6 ft., 5c each. N. M. CUNNINGHAM, Red Bluff, Cal.

WRITE NOW FOR PRICE—Giant Crimson Winter Rhubarb, both of Burbank's and Wagner's. Produce fully 3 times of any other kind. Special offer for intending planters. FRANK J. MATSUDA, Morganhill, Cal.

WALNUT TREES—Late blight resisting varieties grafted and budded on California black and hybrid roots—Eureka, Franquette, Mayette, Nef's Prolific, Concord and Placencia. Dr. W. W. Fitzgerald, Elks Bldg., Stockton, Cal.

THE FRANADA NURSERY CO. of Ducor, Cal., will quote you Florida or Cuban sour orange seed delivered to your station or P.O. Hundred thousand sour root orange seedlings, none finer; also citrus trees.

EARLY TOMATOES—If you have failed on account of dropping of the early blossoms, try the "Quarantino." Pkt. 10c; oz. 50c. Plant now. J. S. PHILIPPI, Norwalk, Cal.

BERRY PLANTS AND RHUBARB—Everything in small fruits for garden and orchard. Send today for price list Louis F. Scribner, Pasadena, Cal. R.F.D.

50,000 apple trees on rented ground, must sell for a short time; will sell at half price. Full Value Nurseries, Petaluma, Cal.

TREES—Special prices on grafted walnut trees. Oranges, lemons, apricots, pears, peaches—everything. Get my prices. A. R. Marshall's Nurseries. Box 64, Santa Ana, Cal.

ROBINSON CITRUS NURSERIES, San Dimas, Cal., growers of standard orange and lemon trees. Also Burbank and Mediterranean spineless cactus plantations.

STRAWBERRY PLANTS—Marshall, Gold Dollar, Clark's Seedling or Hood River, \$2.50 per 1000. First-class, well packed. J. W. VINACKE, Canby, Ore.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna Route 3, Riverside, Cal.

ORANGE SEEDLINGS, sweet and sour. Grafted walnuts. Budded avocado. Apple, pear, apricot, Trees of all kinds. Orange County Nursery, 4th and Birch, Santa Ana, Cal.

ORNAMENTAL AND FRUIT-BEARING trees and shrubs adapted to the Sacramento valley, at bargain prices A. Norby, Orland, Cal.

Fruit Trees, Berries and Small Fruits: acreage planting a specialty. Roses. Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

LAND FOR SALE.

VICTORIA, AUSTRALIA, WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California; no extreme heat or cold. Small deposit and 31 1/2 years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairy, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Box W, 687 Market St., San Francisco.

FOR SALE—Alfalfa ranch of 25 1/2 acres. 10 acres of one-year-old stand and 10 acres to be sowed this spring. Water \$2 per acre per year. Will sell for \$250 per acre with everything thrown in. A. Fuller, Box 423, Amsterdam, Cal.

HARBOR PROPERTY

Lots from \$200 to \$1000; easy terms. Seattle, Richmond and San Pedro netted investors thousands. Invest in Monterey shore frontage, the last of Pacific harbors. Agents wanted. Write J. J. HARRIS, Owner, Box 59, Fresno.

Send for illustrated circular of best, most artistic orchard home in Santa Clara Valley; 20 acres. JOHN F. BYXBEE, Palo Alto, Cal.

WANTED.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Salesmen for Harbor Property. Write J. J. Harris, Owner, Box 59, Fresno.

WANTED—25,000 Burbank cactus leaves in varieties, for spring delivery. P. O. Box 265, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

Plant your orchard with dynamite system. We planted, in the spring of 1913, 28,000 trees with a loss of only 2%. Contracts taken for planting trees in any part of the State; 18 years practical experience. Write to ZUUR & CO., Santa Rosa, Cal.

WILL EXCHANGE almost new Peerless touring car, cost new \$4500, for either beef cattle (calves or steers), or will give same to party to dig me deep wells. H. L., 21 Montgomery St., San Francisco, Cal.

ALFALFA SEED, excellent quality, guaranteed free from dodger and weed seed, 12 1/2 lb. f.o.b. Litchfield, Lassen Co. W. E. BRADLEY, Standish, Cal.

For Sale—Alfalfa hay, second, third, fourth and fifth crops. All good, first-class hay. Write for prices. V. L. Wiser, R. D. No. 1, Gridley, Cal.

To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

FOR SALE—No. 1 alfalfa hay in car-load lots, any quantity up to 400 tons. Prices right. Address correspondence Lodi, Box 61, R. F. D. No. 3.

EGYPTIAN WHEAT CORN, for seed only. Ask for prices. Egyptian corn, white, price \$30 per ton f.o.b. Winton. WINTON SEED CO., Winton, Cal.

FOR SALE—Simplex Separator and Babcock Tester. C. L. LIND, R. D. 1, Box 20, Fresno, Cal.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM

Woodland, Cal.

PERCHERONS

Pure-bred and registered. If you want good ones, I've got them.

E. S. PORTER, Los Molinos, Cal.

One-half mile south of town.

Building Up a Herd of Pure Breds.

[WRITTEN FOR THE PACIFIC RURAL PRESS BY J. C. LOOMIS.]

The success of all pure bred herds in this State reads about the same so far as the starting of them is concerned, for in most cases the start was made with a few head of females and the business has been built up in that way.

It has often been shown that the man who went into the breeding game in that way had a smaller chance of failure than one who went in too deep before having the actual experience in handling pure bred stock.

Among those who have taken the safe method is W. J. Hackett of Ceres, who started five years ago with three females, and although since that time he has purchased two more cows, he now has over thirty-five head on the place and has in the meantime sold a good deal of stock for breeding purposes to other dairymen.

In accomplishing these results nothing out of the ordinary has been done by the owner except to study the production and feeding sides and in this respect more attention has been given than one finds on many of our breeding establishments, the natural result being that a good deal of headway has been made in official work, which is perhaps the liveliest factor that dairymen now have to consider.

At the time of our visit there were 12 head on official test but as none of them had finished their year's work, it was not known what the ultimate result would be, but one heifer had gone into the Register of Merit after being on test for seven months, so it is expected that very satisfactory results may be expected.

When the place was first purchased it was planned to do diversified farming as much as possible and with that end in view a part of the land was planted to apricots and peaches, 10 acres were left for corn and hay and the balance planted to alfalfa. It was thought that with such a general plan of farming there would be no slim and fat years such as many who specialize often find. Since that time, however, it has been found that the dairy is the quicker and surer way of deriving a revenue, for although the orchard is still young, it has never so far borne a profitable crop and as a result the dairy has been compelled to furnish the income.

About four years ago the owner decided to try ensilage as a feed and erected a cheap silo, planting Indian corn on the 10 acres of unplanted ground. Silos were a comparatively new thing in that district at that time but since then there have been many others built and everyone agrees with Mr. Hackett that they are a necessity on all well regulated dairies.

In growing the corn crop it has been found that eastern seed does not do so well as southern grown seed and it was due to eastern seed this year that the corn was a complete failure. Although mill feeds have been substituted this year in the place of the ensilage in an effort to balance up the ration, we were told that so far the results have not been nearly so satisfactory.

Oats are planted on the corn land during the latter part of December or early in January and harvested during June or July, when the corn is planted. We were told that a fair average yield of hay was two and a half tons and that the yield of corn was usually around 10 tons to the acre. This would not be possible on the land if it had not been enriched with the fertilizer supplied from the dairy.

There are about 28 head of milk cows on the place at present, although it is the object to keep eventually less, but as has already been pointed out, it is expected that through official testing, the final herd will all be high producers.

FORAGE CROPS AND HOGS.

It is doubtful whether farmers as a rule appreciate the real value of forage crops as feed for hogs for while we have, in this State large quantities of alfalfa pasture which could be profitably used as pastures for hogs as well as furnish alfalfa hay for other kinds of stock, we are woefully lacking in our pork production.

A lot of good advice has been sent out by the U. S. Dept. of Agriculture along this line that is particularly fitted to conditions in California as they are today which says in part:

Forage crops are especially beneficial to young growing animals. It is possible to grow them much more profitably and successfully when a good green field of palatable and nutritious pasture is provided. Experiments and practical farmers' experiences prove that gains in weight are made at less cost than when grain fields are entirely depended upon. Foraging induces the animal to exercise and obtain fresh air, and these prevent diseases being contracted, and when the animals are put in the fattening pen their gains are unusually rapid and profitable. The green feeds eaten are of much value

Best for Stock Breeders

For many years the PACIFIC RURAL PRESS has advocated the growing of better stock and the keeping of better bred farm animals. Its readers are educated to advantages of good breeding in stock. They are the most progressive farmers, dairymen and stockmen in every section of this State. They want and have the money to buy good breeding stock. The leading breeders know this and use its advertising columns regularly. Read what they say about results.

HILLCREST STOCK FARM,
Breeders of Short-horn Cattle,
Merino and Shropshire Sheep.
Davis, Cal., Jan. 15, 1914
The Pacific Rural Press.

Dear Sirs: In reply to your letter received some time ago, will state that the results received from advertising in your paper have been more than satisfactory; in fact, the best I have ever received.

Wish to compliment you on the improvement of your paper the past year and trust that you will have a prosperous year coming. With best regards, I remain
Yours very truly,
T. S. GLIDE.

A. W. MORRIS & SONS CORP.,
Breeders of Holstein-Friesian Cattle.
Woodland, Cal., Dec. 23, 1913.
Pacific Rural Press.

Gentlemen: We have found the Pacific Rural Press to be an advertising medium of the highest order, and the results attained from our advertising in its columns have been gratifying. We find that it reaches the right class of farmers and stock growers.

A. W. MORRIS & SONS.
F. L. Morris.

Modesto, Cal., Jan. 9, 1914.
Pacific Rural Press,
420 Market St., San Francisco.

Dear Sirs: Have received excellent results from my advertisement in your paper during the past year. I wish you much success in the future.

Yours respectfully,
J. W. BENOIT.

SALVADOR STOCK FARM,
Breeder of Shire Horses.
Napa, Cal., Jan. 14, 1914.

Gentlemen: I consider the Pacific Rural Press a first-class advertising medium for live stock.
HENRY WHEATLEY, Prop.

Farmington, Cal., Jan. 13, 1914.
Pacific Rural Press.

Gentlemen: I am just writing to thank you for the splendid assistance I have received from advertising in your paper this year. I have sold over \$4000 of thoroughbred Poland-China hogs this year, and a great number of these sales have been through the notice you have given my stock in your columns.

May you have the best of success; you surely deserve it.

A. M. HENRY,
Breeder of Poland-Chinas.

RANCHO DOS RIOS,
Breeders of Jerseys.
Jan. 13, 1914.

Pacific Rural Press.
Gentlemen: I am more than glad to say that a very large percentage of the inquiries I have had in regard to stock during the past year have come from readers of the Press, and I believe it stands today one of the BEST dairy papers on the Coast.

Yours for a good year,
R. E. WATSON.

OAK GROVE DAIRY FARM,
Breeder of Berkshire Hogs.
Woodland, Jan. 23, 1914.
Pacific Rural Press.

Gentlemen: I sell more high-class breeding stock through the Pacific Rural Press than through any other paper. I find it reaches the farmer and swine growers who want the best stock.

H. ARMSTRONG

Modesto, Cal., Jan. 15, 1914.
Pacific Rural Press.
Gentlemen: I have made nine out of ten of my sales through the Pacific Rural Press, and you know I have tried almost all the other papers.

Your friend,
JOHN P. DAGGS,
Breeder of Duroc-Jersey Swine.

If you have breeding stock of any kind for sale a liner in the Breeders' Directory or a display advertisement will help you sell it.
Address Advertising Department

Pacific Rural Press

420 Market Street

San Francisco, Cal.

just to keep the pig's digestive system in good condition and the appetite keen.

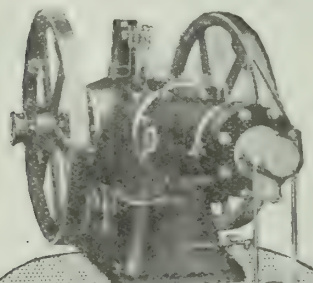
The entire hog herd can be run on forage crops and will profit by this method of management. Younger animals seem to derive the most benefit, and fattening hogs the least. Herd sows and the herd boar are benefitted by having green feeds. It is a good plan to have the brood sow running on green pasture at farrowing time, as this is conducive to a strong, healthy litter of pigs. She should be kept on green forage from the time she farrows. The young pigs will soon learn to eat, and the exercise and the green food in its natural state will start them along in good condition.

The method of feeding when on pasture will necessarily vary according to the kind of crop used. If the crop grown be rape, alfalfa, clover, cowpeas, soy beans, or other crops high in protein content, the grain rations need not be supplemented by feeds high in protein. If blue grass, rye, oats, or other non-leguminous crops are grown, it is best to add a small percentage of feeds high in protein to the grain. Corn or barley usually furnish the bulk of the grain ration, and when necessary these can be supplemented by adding one-tenth linseed-oil meal or one-sixteenth tankage. The rate of

feeding will depend on the grains desired. Considering a full grain ration to be 4 pounds daily per 100 pounds live weight, we may say that for ordinary work with growing shoates a one-half grain ration, or 2 pounds a day for each 100 pounds live weight, will give satisfactory results. If it is desired to make faster gains a heavier grain ration can be used, and if it is desired to maintain the animals as cheaply as possible a smaller percentage should be fed.

It seems doubtful if it ever pays to try to keep pigs on forage crops alone. These crops are sometimes sufficient to keep the pigs growing, but the gains are not usually made economically. Usually the pigs are kept at a loss in live weight. Where brood sows are kept they should be given enough grain to keep them in good thrifty condition. The fact that the forage crops have high value when grains are fed does not mean that they should be fed alone.

The crops best adapted to grazing with pigs are alfalfa, rape, clover, blue grass, bermuda, rye, oats, soy beans, and cowpeas. The nature of the soil, the climate and the rainfall are influences that should govern the selection of the crops to be used. Alfalfa is the greatest forage crop on soils suited to its growth.



Muncie Oil Engine

10 to 80 H.P.
The only engine in these sizes successfully operating today in California on California Fuel Oil

Don't let the failures of other so-called oil engines prevent your full investigation of the Muncie

CHAS. CALVERT
IRRIGATION MACHINERY
CALIFORNIA HYDRAULIC ENGINEERING & SUPPLY CO.
68 FREMONT ST., SAN FRANCISCO

Some Prune Things Still to be Proven.

To the Editor: There has sprung up quite a "craze" down my way for a larger prune. Some are planting Sugars and Imperials. Others take a chance at some of the "Improved" and "Pedigreed" French prunes in hopes of getting a larger variety. Several have ordered Burbank's Standard for a drying prune. Would you advise extensive plantings of this variety or would it be best to wait a few years to see what the smaller plantings of this variety will amount in this locality? Also, do you think it would be wise to plant extensively of Burbank's seedless "Conquest" prune, for drying purposes?—L. H., San Benito.

[The prune which is safest to plant is the French prune, and the so-called "Improved" and "pedigreed" are merely selections of the best types of French prune, and presumably better to plant than the unselected common types. Sugars are very profitable north of the bay and are being quite largely planted in that district. The Sugar is however, inferior to the French prune in everything but size, and to get that it needs thinning, and we are very confident of its being permanently successful for drying although it may be a good shipping plum. Imperials are also being planted north of the bay where they seem to please growers better than in the Santa Clara

valley; the Santa Clara valley Imperial being quite subject to thrips, rather late, large and therefore more difficult to dry than the French. The Standard prune must still be tried out. We have no opinion concerning its future for lack of demonstration of characters from plantings previously made. The same is true of Burbank's seedless prunes. It is still a question as to how valuable they will be as a dried product.—EDITOR.]

BUY ALL THE BARTLETT'S AT ONCE.

To the Editor: I wish to plant quite an acreage to Bartlett pears, but am not quite sure which variety should be planted for a commercial market. Please advise which is best to plant, the summer, autumn or winter variety? Some advise the planting of the summer pear and others the winter pear.—L. H., Manzanar, Inyo county.

[There is really only one Bartlett which is largely produced in this State and that is a fall pear. There may be some other pear which is called the summer Bartlett and there is another one which is called the winter Bartlett. The one which is largely grown in this state and which is more profitable than any other pear is simply the Bartlett, a fall pear, and that is the one which it is safest to plant at the present time. It is likely to be profitable with you because the fruit would probably ripen late after the main Bartlett product of the State is disposed of. We doubt if any summer pear would be worth your growing unless you had local demand for it, because summer pears would come so much earlier from other parts of the State. The winter Bartlett is held to be desirable by some, but it has not yet been sufficiently tried.—EDITOR.]

OPPORTUNITY FOR MORE WINTER PEARS.

To the Editor: In my contention for winter pears, the market now is almost bare already. The few winter Nellis on the market are smaller than usual, owing to the drier season—very few winter pears having any irrigation. An Easter Beurre crop would be worth two to three times what July or August Bartletts would fetch.—L. E. BLOCHMAN, Berkeley.

[Verbum sat sapienti.—EDITOR.]

RHUBARB GROWERS ORGANIZE.

A largely attended meeting of the Rhubarb Growers' Association was held in San Leandro last week for the purpose of arranging for the handling of the rhubarb crop, which is expected

to be a heavy one. Fred Stenzel is president of the association and W. Smith secretary. It was reported that prospects are bright for a bumper crop this season, and the association made

preparations to have the rhubarb properly distributed to the different markets. All the prominent rhubarb growers in the Alameda rhubarb section belong to the association.



"Let Dynamite Dig Your Ditch"

"Acres of land lying idle for want of water. Plenty of water going to waste elsewhere. What's the use when

Hercules Dynamite

will dig the ditch that brings water to your fields and prosperity to your farm?

"I used to pay 25c. a yard for pick and shovel labor, now I can dynamite ditches for less than half that, not counting the saving in time. Hercules dynamite is the best farm hand I ever employed. No board, no keep, no bother—just work."

Write for "Progressive Cultivation," a booklet containing valuable information concerning the uses of dynamite on the farm.

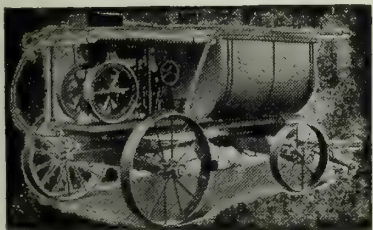
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HERCULES POWDER CO.

Chronicle Building

San Francisco, Cal.

HARDIE SPRAYERS



The Sprayer with the trouble left out.

Power Sprayers, Barrel and Bucket Pumps, Rods, Nozzles, Hose, etc. Catalog.

POINDEXTER & SNITZER, State Agts.
320 Market St., San Francisco.

POWER

BEAN POWER SPRAYERS are strong, durable, efficient, and differ chiefly in size and capacity. All deliver the spray at high pressure and do the work at a minimum of cost and attention. SEND FOR CATALOG 28-A, which describes the entire Bean line of Hand and Power Sprayers and tells about the twenty-one distinctive Bean features. A Postcard will bring it. BEAN SPRAY PUMP CO.
211 W. Julian Street
San Jose, Cal.

SPRAYERS



Spray Pumps OF ALL KINDS

Spray Nozzles, Hose

Everything in the Spray Pump Line
Send for Catalogue

Woodin & Little
Pump House

33-41 Fremont St., San Francisco

"THERE IS A REX FOR EVERY ORCHARD TROUBLE"

REX LIME AND SULPHUR SOLUTION

REX ARSENATE OF LEAD

REX MISCIBLE CRUDE OILS

REX MISCIBLE DISTILLATES

REX PHENOLS — REX SOAP STOCK

"THERE IS A REX FOR EVERY ORCHARD TROUBLE"

The Rex Sprays are the perfection of more years of practical experience than any line of Spray Materials on the market and are kept abreast of the times by the use of the best quality of ingredients that can be bought and being processed by the best science and skill that money will hire.

WHEN YOU USE REX YOU USE THE BEST

WE SPECIALIZE—MAKE—SELL SPRAY MATERIALS ONLY—WE HAVE NO SIDE LINES.

YOUR RESULTS DETERMINE OUR SUCCESS.

IN REX SPRAY MATERIALS YOU GET QUALITY FIRST AND PRICE TO CORRESPOND—NOT PRICE FIRST AND QUALITY ACCORDING. OUR DEPARTMENT OF INSECT CONTROL WILL ADVISE YOU.

WRITE US.

California Rex Spray Co.

Benicia, Calif.

When to Hatch: a Question of Importance.

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

The old saying that "the early bird catches the worm," may be true, but there are two sides to it, if even it is true for sometimes the bird gets caught through being too early.

A great deal of this lack of winter eggs has come about from the early worm theory getting such a hold of people. The early pullets that were going to supply the egg trade this winter, went on a strike, and even feeding "strikebreakers" refused to break it until the pullets got on their new winter clothes.

Go INTO WINTER MOLT.—Leghorns, Anconas, and other small breeds, that are hatched during January and February always go into winter molt. I have never seen a flock that did not take on either a partial or full molt in January. This being so, what have we to gain by this early worm business.

A month or two later is more satisfactory in all ways, the egg prices are lower, so that the chick does not cost as much, eggs are more fertile, and weather is more pleasant for the chicks, and better yet, when the pullets have made the last change and got their adult feathers, it is a case of clear sailing as they will continue to lay right along, all things being conducive, such as shelter, feed, etc., there will be no need for "strikebreakers" because they will not go on strike.

In the case of hatching, for the fancy, of course, that is different, as the fancier must hatch a few at all times to be ready for special occasions. And this also applies to the broilerman, or those with the heavy breeds, which require cool weather, in order to do the best growing. In our climate we can hatch at any season.

That has been demonstrated times enough to need no comment, but the question is, does it pay? We are in the chicken business for the pay, not for mere sentiment, and unless it can be proved that it pays to hatch chicks, in January, we may as well rest a while and hatch when it will pay. March and April are the two best months for hatching the small breeds, that is for laying pullets and broilers, and by that is meant the cockerels from these hatches will not bring quite as high a price, as those hatched earlier, but if raised right, the pullets will more than make up the loss. True the man who has a few thousands to hatch cannot wait and do all his hatching under the most favorable conditions, or at the most opportune times; he must hatch early and late, or have a much larger capacity, to allow for doing things at special times, but very few want to do that.

The poultryman, or farmer, who raises a few hundred, or even but one hundred, can hatch or buy chicks for the right time, and as these articles are written to the man or woman that raises a few, we are talking to them. Last summer I bought 100 Black Minorca chicks, and raised 54 pullets, out of the hundred, the cockerels were sold early. Now these chicks were late, being hatched on the 20th of May, and the weather being very warm they did not appear to grow, or the growth was so slow that it was discouraging to watch them, but I kept feeding all they would eat, kept them clean and saw

that they wanted for nothing, that would make for health and growth, and the result is sure satisfactory. They commenced to lay, on the 15th day of December, just five days short of being seven months old, and I think that was good, considering the hot weather we had while these chicks were small. At present I am getting from 20 to 25 eggs a day, and there is no holding back for weather.

The queer thing is this, people will keep insisting that the Mediterraneans mature so much quicker than the large breeds, such as Orpingtons. Now I had Orpingtons hatched out at the same time, that were laying, early in November, over a month earlier.

There is another popular theory gone to smash; raised under proper conditions there is very little difference in the maturing of the small and large breeds. Of course, the large breeds have to make more growth and the fowls are stronger, when the growth is natural, without being forced either with heated brooders or forcing foods. Given natural conditions and the breeds will not vary, very much.

HEALTH THE MAIN THING.—If we want hens that will make a profit the chief factor, in the raising of them, is to keep them healthy. To be healthy they must have plenty of fresh air, clean water, not too much concentrated food, but good wholesome food, with plenty of green feed of any kind they will eat, and a moderately warm house while small chicks.

Before a hen can be a good layer she must have a healthy robust constitution to draw from, this is only acquired by living as near to natural conditions as we can make for her; a weak hen may start out, to all appearances, all right, but she can't hold it up. None of these big record hens have been raised in dirty heated brooders, they could not lay so many eggs without having consumed gallons of fresh oxygen, uncontaminated by foul odors, so that should be borne in mind when planning when to hatch.

If we have to hatch more than can be hatched during the most favorable months, then it is better to hatch a little earlier than a little later, of two evils choose the lesser.

If late or early hatching can be called an evil, then we ought to choose the one that is handiest and best for us under individual circumstances. If late, then provide shade and growing green feed, if early provide a run out doors, but sheltered from the elements, for best results. Plenty of outdoor exercise makes chicks rugged.

The weaklings may die, but they are better dead, you don't have to feed dead chicks, so that once dead the loss account is closed.

A lady sent me word last summer that she had some of her chickens blanketed, the poor little things were so miserable, she said. And the egg supply from them, if she raised them, would be just as miserable. If chicks are hatched right and properly cared for they should not need any blankets. That is the "latest," in chick raising, but it would require more patience than I am possessed of to try it.

Californians almost turn night into day and winter into summer because we do have summer conditions, all the time, but even so, nature gives us a reminder, once in awhile, that she

has some little say in these things, and nature always has set the spring season as the ideal time for the raising of young, so if we try to accommodate the old dame, in this hatching business, we will be about right.

J. B. K., of Turlock, writes to ask where he can obtain Indian Runner Ducks, or eggs. Also if it is necessary to keep ducks in a pen all day in order to get the eggs. Answering the last question first, I will say no, it is not necessary to keep them in all day. Ducks always lay early in the morning and they should be kept in until all the eggs have been dropped. Keep plenty of good clean straw around where you want them to lay, and you will find the eggs buried in the straw. Ducks will drop their eggs anywhere, if let to run, but like everything else they can be trained and will generally all lay before 10 o'clock, when they can be let out for the day. I think of you will write to Mr. Wm. A. French, 545 W. Park Street, Stockton, Cal., you will find Indian runners. If Mr. French has not got Indian runners, write to Ada M. Eastman, Maxwell, Cal. She has both ducks and eggs.

Duck raisers what are you doing? You ought to catch on that nobody but the government can make money without advertising, these days. Better advertise. The boy said it paid when the teacher kept him in after school hours.

WHY BELGIUM IS IN TROUBLE.

Edward Brown writes to the English journal, Co-operation, in this way:

"During recent years a great poultry industry has grown up in the Provinces of East Flanders and Antwerp, Belgium, in the production of high class fowls for table purpose, and a vast trade has resulted in the export of

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

WHITE LEGHORNS by the thousand, MacFarlane and Carrington foundation stock, splendid birds, heavy layers, good fertility. No females for sale. Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100, \$60.00 per 1000. Chicks \$8.00 per 50, \$15.00 per 100, \$140.00 per 1000. Cockerels \$3.00 each, \$30.00 per dozen. White Rocks, Owen Farm and Fishel foundation stock, special prize winning pens only. No stock for sale. Eggs \$3.00 per 15, \$5.00 per 30, \$15.00 per 100. Chicks \$30.00 per 100. We feed green cut bone, and unlimited green food the year round. Ten acre plant, main breeding houses 20 x 160, brooder house 125 feet long. Those who visit our plant, buy our stock. NEWTON POULTRY FARM, Dept. 2, Los Gatos, Cal. N. B.—Write for prices on poultry supplies, fencing, roofing, and mixed feed, freight paid to your station. We can save you money.

HATCHING EGGS AND BABY CHIX—Booking orders for deliveries after Jan. 10. We specialize on the white egg commercial breeds. White Leghorns, Black Minorcas. For table fowl and great winter layers our R. I. Reds and Barred Rocks. Our aim is utility, well bred, healthy stock, the kind you want for business, at prices that mean a substantial saving, based on our large output (4000 chicks weekly) and a labor-saving practical plant. Hatching eggs \$3 to \$5 hundred and chicks 7c to 15c each, depending on breed, month and quantity. Circular free. Roofden Poultry Ranch and Hatchery, R. 10, Campbell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BHN, Santa Clara Valley Hatchery, San Jose, Cal.

BABY CHICKS—Write for book, "The Day Old Chick Business." It's free. White Leghorn and Black Minorca chicks my specialty. Lasher's Hatchery, 400 Kentucky St., Petaluma, Cal.

WHITE AND BROWN LEGHORN CHICKS that will please you. Let us send circular. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities; \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, San Luis Obispo County, Cal.

S. C. WHITE LEGHORNS from Clover Leaf Farm, Lodi, won 4 specials and 14 firsts (19 possible) at the State Fair, Willows, Oakland and Fresno. Eggs, \$6.00 per 100. Baby chicks, May 28, \$12.00 per 100. A few cockerels, \$3.00 each.

MAMMOTH WHITE HOLLAND TURKEYS will win prizes for you. If you need new blood, order a Tom from us. You can't do better. Big, beautiful, white stock. The Gibson Ranch, Orangevale, Sacramento Co., Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists, W. C. Smith, Prop., Corning, Cal.

SEND TODAY FOR FREE 64-PAGE CATALOG, describes in detail, chicks, hatching eggs, hens, pullets, cocks, cockerels, etc. We ship everywhere. Write us your wants. Pioneer Hatchery, 112 East 8th, Los Angeles, Cal.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

INCUBATOR CHICKS—White, Buff and Brown Leghorns, Black Minorca and White Rock. All high class stock. Send for booklet of prices. H. S. Kirk, P. O. box 597, Sacramento, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

DIABLO WHITE ROCKS—They win repeatedly. Let me quote you prices on eggs and stock. C. J. Struby, Concord, Cal.

INDIAN RUNNER DUCKS. Fawn and White. Eggs from Oakland prize-winners \$1 setting. Also 5 ducks 1 drake \$10. Mrs. Nutman, Mayfield, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

ORPINGTONS. Buff and White. Stock reasonable. Eggs \$3 and \$5 a setting. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

BUFF ORPINGTON EGGS, \$2.00, \$1.50 setting. Runner Duck eggs, \$1.00. "Glendale," Fleming Ave., San Jose, Cal.

LIGHT BRAHMAS. Breeding stock for sale. Eggs for hatching \$2.50 per setting. Box A. B., Pacific Rural Press

ANCONA COCKERELS—Prize-winning strain. Wm. Davey, Rancho Del Toro, Morganhill, Cal.

FOR SALE—Barred Rock cockerels, \$2.00 each and up. Send for folder. G. L. Hawley, Madera, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BRONZE TURKEYS and Eggs. Ed Hart, Clement, Cal. Large size, good plumage, early maturity.

MAMMOTH BRONZE TURKEYS—The best in the West. Geo. A. Smith, Corcoran, Cal.

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S. C. BLACK MINORCA EGGS for hatching. A limited number. J. W. Benoit, Route 2, Modesto, Cal.

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these birds to Germany. That it has been highly profitable is unquestionable, and in the prosperity a large number of people have shared. It was described in my 'Report on the Poultry Industry of Belgium,' published three and a half years ago. Even then, however, I felt convinced that the methods adopted were conducive to disaster, in that these were ultra-intensive and must ultimate in degeneracy and heavy loss. What was then foreshadowed has, unfortunately proved to be true. The industry has been stricken, and an epidemic has spread over the entire country of a most serious character, disastrous in the extreme.

"The form which it has assumed is a high rate of mortality in chickens. In some instances the deaths have reached 80 per cent of the birds hatched. In others all have died. Ruin has followed in many cases. So great has been the loss that the Belgium Ministry of Agriculture authorized a scientific investigation by the staff of the Louvain University, and a report just issued states that the immediate cause is bacteria which pass from the hen through the egg to the chickens, which are but born to die.

"My own investigations have been rather in the direction of causation, with a view to prevention, and as a guide to our own people, more especially as the present-day tendencies are for the development on intensive lines of poultry-keeping.

"The conclusions arrived at may be summarized as follows:—1, Loss of constitutional vigor in the breeding stock, as a result of the false systems of breeding adopted; 2, Use of yearling cockerels for breeding chickens intended for stock purposes; 3, Inbreeding; 4, Forced methods of rearing chickens that are grown as breeders; 5, Non-hygienic conditions in the houses and runs, and tainted soil due to overcrowding; and 6, Conditions favorable to the increase of parasites and bacteria."

PROPER COLORING OF TOULOUSE GEESE.

To the Editor: Which is the Toulouse goose, the big grey one with the black tip on their bill, or the one with the orange blossom tip? Please advise me through the columns of your paper.—A. K., Lodi.

[The bill of the purebred Toulouse goose should be orange yellow to meet the requirements of the poultry judge. Black spots on the bill are usually caused by bruises, when young, but so long as the birds come up to the standard in other ways, the black spots should not be any detriment in the breeding of purebred young stock.—EDITOR.]

IMPORTED EGGS.

Statistics from the American Consulate General, at Berlin show an increase of more than \$1,500,000 in exports to the U. S. during the last two months since the tariff act came into force. Eggs are a feature of the increase. These figure for the first time in the reports of the Berlin consulate but the item is already considerable, over \$75,000 worth having been shipped during November and the first 12 days of December or at the rate of more than \$2,000,000 worth a year. This money does not go to poultrymen in Germany, however, for the shipments originate in Russia or Austrian Galicia, and are handled here only in transit.

THE AVERAGE CRATE OF EGGS.

A couple of weeks ago in "Constructive Agriculture" mention was made of the fact that considerable of the success of the Tulare Co-operative Poultry Association was due to turning out a good quality of product, that is, having the cases filled with "Extras" instead of everything under the sun. The following from Oregon will show the general condition of most eggs as they are taken in trade at the average country grocery, or bought from customers, and gives the consequent lowering of price.

Only about three-fourths of the eggs that are packed in crates at the stores as they come from the farm are fresh. Of the remainder about three-fourths are classed as stale, most of the others as cracked and dirty and a smaller number as rotten. This is the average condition of eggs such as are found in the market in various parts of the United States, according to the investigations made by the United States Department of Agriculture.

Perhaps the eggs produced in the Pacific Northwest are not quite so bad as that, at least not always, but they are far from what they should be. When the eggs are packed mixed lots just as they are brought in by farmers and poultrymen, the number of eggs in each of the four classes at certain seasons, as found by candling at the Oregon Experiment Station, is about as follows:

Fresh eggs, 279; stale eggs, 55; cracked or dirty eggs, 24; rotten, 2. In percentages the values in the above order are 77.5, 15.2, and .6.

The conditions of the eggs in the markets is ascertained by candling, a process that under scientific market methods would be attended to by the producer. But as long as no better prices are paid for graded and strictly fresh eggs than are paid for mixed lots, just so long grading before marketing will not be done.

WHO HAS PARTRIDGE COCHIN CHICKENS?

To the Editor: I am experimenting with Partridge Cochin chickens and in order to increase their number for best results, must introduce some new blood. I have watched your advertisements, also those in the daily paper, but find none of this breed of chickens, advertised for sale. Where can I get good thoroughbred Partridge Cochin chicks, or eggs for hatching?—F. H. GORTON, R. R. 2, Box 28, Elk Grove, California.

Here's where we give someone a chance for free advertising, as we have not (unfortunately) the name of any such breeder in our advertising columns, as our reader has said, so you breeders who do not advertise, when you have stock for sale, can jump in and make the best of the situation.

Our advertising manager reports that those who are carrying liners in the poultry department, get excellent results, and from the tone of this letter it is evident that someone is losing a good order by not advertising.

May we suggest that anyone having Partridge Cochin chickens communicate with the above address, and also remember that the RURAL PRESS got one order for him Free Of Cost.

TREES IN THE YARDS.

If you are laying out poultry yards

for the coming season, as so many are, be sure to plant some fruit trees in the run—apples or peaches or pears or cherries. This will bring a double profit; the fowls will enjoy the shade; will enrich the soil, so that the trees will bear more fruit; will make sure that insect enemies do not harm the fruit or the tree, and so insure a better quality of fruit.

MARKING YOUNG CHICKS.

To the Editor: Will you please inform me if there is any practical way to mark young chickens, by perforating the web of the feet? If so, what age would be best and how to do it?—A Subscriber, Oleander.

[Your communication was referred to George H. Crowley, who in replying sends us a diagram showing how to punch holes in the feet of the chicks.

The diagram cannot be shown here, but one can easily figure out different ways of punching the feet so that the different ages can be readily told at a glance. For instance, the first batch would not be punched at all, the second bunch on the inside of the left foot, the third bunch on the inside of the right foot and so on. The punches cost from 25 cents to 50 cents each according to the make. As the holes sometimes close up, however, and through that means the record of the chick is lost, it is best to also band the chick. This is done by first putting on a small band which will be large enough for three or four weeks. After they have outgrown this size a larger size should be purchased to use in its place, which will not have to be again replaced unless lost.—EDITOR.]

THERE ARE EGGS AND EGGS.

Some eggs are better than others, a fact which nobody needs to be told and prices and market names vary accordingly. That does not prevent cold storage eggs from occasionally being sold as fresh, and so on, as most people also know, nevertheless the names of different grades still exist. In California the two standard grades are "Extras" and "Selected pullets", then down by degrees.

In England recently a dealer was fined for selling Russian eggs as "new laid", which called forth the following definitions from an English paper:

"New-laid."—Three to five days old, in accordance with the season of year, and in other respects as laid down above. These alone are recommended for boiling;

"Breakfast."—In all respects the same, save that as they are a few days older there is a slight shrinkage and the bright appearance has gone. For poaching or frying these are excellent;

"Fresh."—Not preserved. Good eggs for cooking, but nothing more. Usually foreign and inferior native supplies, in which value has been lost by delays in marketing;

"Cookers."—A varied class, including "pickles," often very doubtful indeed. Faith is necessary for their consumption; and

"Eggs."—Upon these the curtain may be drawn. A scrap-heap for the other classes.



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The Home Circle.

A Pariah.

"I have heard that there is corn in Egypt."

Slyne's Chare is in South Shields, and Mason's chop house stands at the lower corner of Slyne's Chare—Mason's chop house, where generations of honest Tyneside sailors have consumed honest pounds of mutton and beef, and onions therewith. For your true salt loves an onion ashore, which makes him a pleasanter companion at sea. Mason's chop house is a low-roofed, red-tiled, tarred cottage, with a balcony—a "balcohnny" overhanging the river. It is quite evident that the "balcohnny" was originally built and has subsequently been kept in repair, by ship's carpenters—it is so glaringly ship-shaped, so redolent of tar, so ridiculously strong.

The keen, fresh breeze—and there is nothing keener, fresher, stronger and wholesomer in the world than that which comes roaring up between the two piers of the Tyne—this breeze blows right through Mason's and blows the fume of cooking out into Slyne's Chare.

It is evening—tea time—and the day's work is almost done; for Mason's does little in suppers. A bullet-headed boy is rubbing pewter pots at the door. Mrs. Mason, comfortably somnolent at the entrance of the little kitchen, watches her daughter, comely, grave-faced Annie Mason—"our Annie," as she is called, who is already folding the tablecloths. A few belated customers linger in the partitioned loose boxes which lend a certain small privacy to the tables, and often save a fight. They are talking in gruff, north country voices, which are never harsh.

A man comes in, after a moment's awkward pause at the open door, and seeks a secluded seat where the gas overhead hardly affords illumination. He is a broad-built man—a Tynesider; not so very big for South Shields, a matter of six feet one, perhaps. He carries a blue-spotted handkerchief against his left cheek, and the boy with the pewter pots stares eagerly at the other. A boy of poor tact, this; for the customer's right cheek is horribly disfigured. It is all bruised and battered in, from the curve of a square jaw to the cheek bone, which is broken. But the eye is intact, a shrewd, keen eye, accustomed to the penetration of a northern mist, accustomed to a close scrutiny of men's faces. It is painfully obvious that this sailor—for gait and clothes and manner set aside all other crafts—is horribly conscious of his deformity.

"Got the toothache?" inquires the tactless youth.

"The newcomer replies in the negative and orders a cup of tea and a herring. It is Annie who brings the simple meal and sets it down without looking at the man.

"Thanks," he growls in his brown beard, and the woman pauses suddenly. The she slowly turns—for she had gone a step or two from the table—and makes a pretense of setting salt and pepper close to him.

Three ships had come up with the afternoon tide—a coaster, a Norwegian bark in ballast, and a full-rigged ship with nitrate from the west coast of South America.

"Just ashore?" inquired Annie, economical with her words, as they mostly are round the northern river.

"Ay!"

"From the west coast?"

"Ay," grumbles the man. He holds the handkerchief to his cheek and turns the herring tentatively with a fork.

"You'll find it's good enough fish," says the woman, bluntly. Her two hands are pressed to her comely bosom in a singular way.

"Ay," says the man again, as if he had no other word.

The clock strikes six, and the boy more mindful of his own tea than his neighbor's ailments, slips on his jacket and goes home. The last customers dwindle out with a grunt intended for a salutation. Mrs. Mason is softly heard to snore. And all the while Annie Mason, all the color vanished from her wholesome face, stands with her hands clutching her dress, gazing down at the man, who eximanes the herring with a self-conscious awkwardness.

"Geordie!" she says. They are all called Geordie in South Shields.

"Ay, lass," he answers, shame-facedly.

Annie Mason sits down suddenly, opposite to him. He does not look up, but remains, his face half hidden by the blue spotted handkerchief, a picture of self-conscious guilt and shame.

"What did ye do it for, Geordie?" she asks, breathlessly. "Eleven years, come March—oh, it was cruel!"

"What did I do it for?" he repeats. "What did I do it for? Why, lass, can't ye see my face?"

He drops the handkerchief and holds up his poor scarred countenance. He does not look at her, but away past her with the pathetic shame of a maimed dog. The cheek thus suddenly exposed to view is whole and brown and healthy. Beneath the mahogany-colored skin there is a glow singularly suggestive of a blush.

"Ay, I see your face," she answers, with a note of tenderness for the poor scarred cheek. "I hope you haven't been at the drink."

He shakes his head with a little sad smile that twists up his one-sided mouth.

"Is it because you wanted to get shot of me?" asked the woman, with a sort of breathlessness. She has large, gray-blue eyes with a look of constant waiting in them—a habit of looking up at the open door at the sound of every footstep.

"Annie, could I come back to you with a face like this, and you the prettiest lass on the Tyneside?"

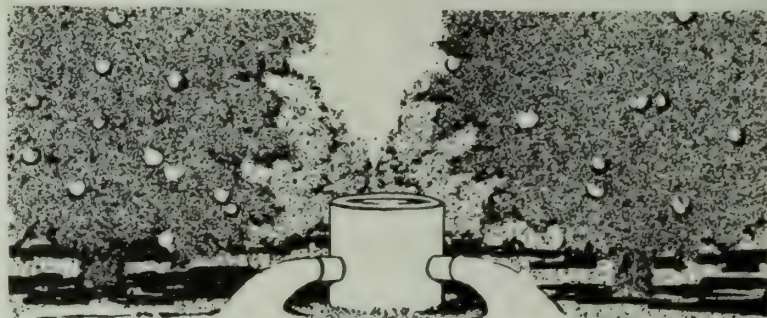
She is fumbling with her apron string. There is a half coquettish bend of her head—with the gray hairs already at the temple—awakened, perhaps, by some far-off echo in his passionate voice. She looks up slowly, and does not answer his question.

"Tell us," she says, slowly, "tell us where ye've been."

"Been! Oh, I don't know, lass! I don't rightly remember. Not that it matters. Up the west coast trading backwards and forwards. I've got my master's certificate now. Serving first mate on board the Mallard to Falmouth for orders, and they ordered us to the Tyne. I brought her round—I knew the way. I thought you'd be married, lass. But maybe ye are."

"Maybe I'm daft," puts in Annie, coolly.

"I greatly feared," the man goes on, with the slow self-consciousness of one unaccustomed to talk of himself, "I greatly feared I'd meet up with a bairn of yours playing in the doorway. Losh! I couldn't have stood that! But that's



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why I stayed away, Annie, lass, so that you might marry a man with a face on him. I thought you would not know me if I held my handkerchief over my other cheek."

There is a strange gleam in the woman's eyes—a gleam that one or two of the old masters have succeeded in catching and imparting to the faces of their Madonnas, but only one or two.

"How did you come by your hurt?" she asks, in her low voice.

"Board the old Wallerloo going out. You mind the old ship. We had a fire in the hold, and the skipper he would go down alone to locate it before we cut a hole in the deck and shipped the hose in. The old man did not come up again. Ye mind him. Old Rutherford of Jarrow. And I went down and looked for him. It was a hell of smoke and fire, and something in the cargo stinking like—hell fire as it burnt. I got a hold of the old man, and was fetching him out on my hands and knees, when something bursts up and sends us all through the deck. I had three months in the Valparaiso hospital; but I saved old Jack Rutherford of Jarrow. And when I got up and looked at my face I saw that it was not in the nature of things that I could ever ask a lass to have me. So I just stayed away and made believe that—that I had changed my mind."

The man pauses. He is not glib of speech, though quick enough at sea. As he takes up the little teapot and

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BERRY APRON CO.,
Box 31, Stockton, Cal.

shakes it roundwise, after the manner of the galley, his great brown hand shakes, too.

"I would not have come back here," he goes on after a silence, "but the Mallard was ordered to the Tyne. And a chap must do his duty by his shipmates and his owners. And I thought it would be safe—after eleven years. When I saw the old place and smelt the smell of the old woman's frying-pan I could not get past the door. But I hung around, looking to make sure there were no bairns playing on the

floor. I have only come in, lass, to pass the time of day, and to tell you ye're a free woman."

He is not looking at her. He seems to find that difficult. So he does not see the queer little smile, rather sadder in itself than tears.

"And you stayed away eleven years—because o' that," says the woman, slowly.

"Ay; you know, lass, I'm no great hand at the preaching, and Bibles, and the like; but it seems pretty clear that them who's working things did not think it fit that we should marry. And so it was sent. I got to think it so in time—least I think it's that sometimes, and no woman would like to say, 'That's my man—him with only half a face.' So I just stayed away."

"All for that?" asks the woman, her face, which is still pretty and round and rosy, working convulsively.

"Ay, lass."

"Then, honey," she cries, softly, "you dinna understand us women."—Cornhill.

Introducing People.

"How shall I perform an introduction?" inquires a girl who likes to do things gracefully, and who is entirely right in her notion that for most things there is a right way and also a wrong way.

Introducing people is neither difficult nor occult, and it requires no special training. There are a few very simple rules to be observed. You present a gentleman to a lady, and a younger to an older person. You are careful to speak clearly and distinctly, for nothing is more embarrassing than to have a stranger's name mumbled so that it remains unknown, thus defeating the end of the introduction. You do not say, "Mother, let me present my classmate," leaving your mother to guess at the part of your speech which was really the most important; you say, "My classmate, Miss Leonard." And equally when you are introducing Miss Leonard to your friend you do not say, "Alice, may I introduce my cousin Sophie," in which case neither young woman would have the least idea of the other's Christian name. If a person is a personage—a professor, or doctor, or clergyman, or in any way noted or famous—the tactful girl makes the title a part of her introduction, so that the people presented to him are aware that they are honored by the new acquaintance.—Harper's Round Table.

There is no braver thing in life than the walking down grade of years into sure weakness, loneliness, and helplessness, with sweet resignation and a cheerful ignoring of the situation. The active heroisms of life are naturally set up as examples because they are presented in attractive form and in engaging instances. But the passive heroisms are more admirable because they have no such compensations and meet no such recognition. There is little that is dramatic and inspiring in them. The aged are therefore left to themselves. The vigor of the world selects what is like itself. So it easily becomes customary to classify people in a way that leaves the retired forces out of any respectable account or only such account as is reminiscent. The wisdom of Socrates, in the opening part of the Republic, may well be regarded by youth and manhood in every generation. "There is nothing which I like better, Cephalus, than conversing with aged men like yourself; for

I regard them as travelers who have gone a journey which I, too, may have to go, and of whom I ought to inquire whether the way is smooth and easy or rough and difficult."

He Played Safe.

Senator Vardaman, at a luncheon at the New Willard, said of a certain trust's defense:

"The defense is worse than the offense. It takes me back to Bath Beach.

"A young lady at Bath Beach had occasion to complain about one of the bath-house attendants, an old fellow, who, in the hurry of cleaning up, would sometimes burst in upon her in her bath-house without knocking.

"One morning, after this had happened for the sixth or seventh time, the young lady took the old fellow to task.

"See here, Peters," she said, 'there's no lock on my bath-house, as you know, and I must insist on your knocking before you enter. It hasn't happened yet, but it might very well happen, that you'd come in on me when I was all undressed.'

"Peters, with a chuckle, hastened to reassure the young lady on this point.

"No fear of that, miss," he said, 'no fear of that. There's a knothole in the door what I always look through before I venture in.'—Washington Letter.

Beyond Price.

A gentleman was walking with a little boy at the close of the day, and in passing the cottage of a German laborer the boy's attention was attracted to the dog. It was not a King Charles nor a black-and-tan, but a common cur. Still, the boy took a fancy to him, and wanted his father to buy him.

Just then the owner of the dog came home from his labors, and was met by the dog with every demonstration of joy. The gentleman said to the owner:

"My little boy has taken a fancy to your dog, and I will buy him. What do you want for him?"

"I can't sell dat dog," said the German.

"Look here," said the gentleman, "that is a poor dog, but as my boy wants him, I will give you five dollars for him."

"Yaas," said the German, "I knows he is a very poor dog, and he ain't wort' almost nottin', but dere is von leetle ding mit dat dog vat I can't sell: I can't sell de vag of his tail ven I comes home at night."—Forward.

She Knew Sheep.

A city young woman went out to teach a country school. The class in arithmetic was before her. She said:

"Now, children, if there are 10 sheep on one side of a wall and one jumps over, how many sheep will there be left?"

Then up piped the little tow-headed daughter of a farmer:

"No sheep, teacher, no sheep."

"Oh, oh!" cried the city young woman reproachfully. "You are not so stupid as that! Think again. If there were 10 sheep on one side of the wall, and one jumped over nine sheep would be left. Don't you see that?"

"No, no, no," persisted the child. "If one sheep jumped over, all the others would jump after. My father keeps sheep." Then, seeing the puz-

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zled look on the teacher's face, the little tow-head explained apologetically: "You know mathematics teacher, but I know sheep."

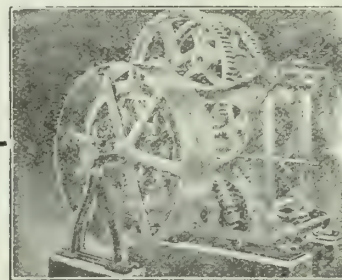
SEES A SPOT ON THAT TELESCOPE.

To the Editor: In the PACIFIC RURAL PRESS of Jan. 17th, I noticed an article headed "The Week," in which you stated that Father Ricard needs a \$60,000 telescope. Now if Father Ricard or any other church dignitary wants a telescope, just let them buy it, or let those they represent buy it for them. It is not right to call on innocent non-Catholics or ignorant Protestants to pay for something they will never get any good out of.

Why should one church be favored above another, or why should any church ask the State to assist in any sectarian institution which is contrary to our constitution? Therefore, when anyone suggests that the State as such, should assist any sectarian institution, he is a violator of our glorious constitution, which is, first, last and all the time opposed to the union of Church and State which will ruin any country because it deprives the citizens of religious and political liberty and freedom.

And besides this, we have the great Lick observatory not far from Santa Clara. It is strictly a State institution, therefore the State does not need a \$60,000 telescope at Santa Clara. So you will be doing every true American liberty-loving, free-speech, free-press, free-thought citizen a kindness to not mention or insist on their donating to a strictly sectarian institution in the name of the State as the beneficiary of such institution. Think before you write again.—A READER OF THE RURAL PRESS, San Jose.

[We print the foregoing, for two reasons; first because we usually give any reader one shot on any subject which interests him; second because we probably misled our reader, in the paragraph to which he refers. We said "it would be a good thing for the State"—meaning the public. We made no suggestion whatever that the State, as such, should buy the telescope, or have anything whatever to do with it. It should also be said that, so far as we know, neither Father Ricard nor



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Manual of Laws.....	2.25
Farm Buildings.....	2.20
Breeding Farm Animals, Marshall.....	1.60
Hog Book, Dawson.....	1.60
The Dairy Farm, Gurler.....	1.10
Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoemith.....	.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees and California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
New Onion Culture, Greiner.....	.50
American Cattle Doctor, Dadd.....	1.00
Home Pork Making, Fulton.....	.50
Farm Gas Engines, Brate.....	1.10
The Book of Alfalfa, Coburn.....	2.00
Swine in America, Coburn.....	2.50
Feeds and Feeding, Henry.....	2.25
Date Growing, Popenoe.....	2.00

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his institution has asked the State to buy it, so our correspondent's indignation is gratuitous. As for Father Ricard's religious connections, we have no more to do with them than he has to do with ours. When he enters scientific or industrial discussion he comes forward as a man and a student. His church does not help him nor hurt him. We do not desire further discussion of this matter.—EDITOR.]

Home Economics.

Home Hints.

GREASE PATCHES ON WALLPAPER.—

These may at times be removed by covering them with a pipe-clay paste, which is easily brushed away when quite dry. A piece of stale bread will remove such marks, but it should be rubbed gently on, so as not to wear the pattern off. The best way, however, is to have all paper varnished, when all grease and other stains can be quickly wiped away with a clean chamois leather and tepid water.

STAINING AND VARNISHING.—Before staining a floor the boards should be smooth and even, and all nailheads driven below, and their holes filled with plaster of paris or putty. Stains can be bought very cheaply, and are generally much more satisfactory than home-made ones. Mixed stains and varnish can also be bought, but it is best to do the staining and varnishing separately. Such stains are capital for those amateur carpenters who have some home-made article, brackets, overmantels, and small tables that require staining and varnishing or french polishing. The last is rather difficult for an amateur to do satisfactorily, who had best confine himself to the varnishing, which, if done with good coach-makers' varnish, will be quite satisfactory, which, if done with good coach-makers' varnish, will be quite satisfactory if allowed to get quite set before handling the article.

AFTER WASHING and drying all iron and tin cooking vessels, lay them face forward in front of a good clear fire to ensure "bone dryness," and so save them from becoming rusted when stored away.

A QUICK POLISH UP for brass work is a piece of cut lemon and a pinch of whiting. Rub vigorously, and finish off with a piece of soft rag. Save the pieces of squeezed lemon for cleaning metal; they are always useful.

A WIND-RATTLED WINDOW is a perfect nuisance, especially during the night. It is easily prevented by fixing the half of an old clothes peg between the two sashes.

A GOOD WAY TO STORE BROOMS in convenient out of the way places is to fix a screw eyelet in the end of the handle with which to hang them on a hook let in the wall high enough up to allow the broom head being within easy reach.—Farm and Home, London.

Curing Salt Pork.

PLAIN SALT PORK.—Rub each piece of pork with fine common salt, and pack closely in a barrel. Let it stand over night. The next day weigh out ten pounds of salt and two ounces of saltpeter to each 100 pounds of meat, and dissolve in four gallons of boiling water. Pour this brine, when cold, over the meat; cover, and weight down to keep it under the brine. The pork should be kept in the brine until used.—Andrew Boss, University Farm, St. Paul.

Marmalade Receipt.

Slice oranges and lemons (one-half as many lemons as oranges), weigh the fruit, and to every pound, add three pints water, and let it stand over night. In the morning simmer slowly till cooked down one half. While hot, add one and a half pounds cane sugar to every pound of mixture. Boil like

jelly for about three-fourths of an hour for six large oranges. If it does not jell, cook longer. Do not use vessel that will darken the mixture.

Good and Poor Flour.

Only about 10 per cent of the bread eaten in the United States is baked in commercial bakeries, as it is common practice of the housewife to bake her own bread. This leads to a widespread interest in the question of the baking quality of flour and an enormous variety of conditions and methods of baking.

There are two essential facts with reference to the baking quality of flour: (1) There are large differences in the composition and quality of flours of different origin, and (2) by using proper methods of handling the dough, good bread can be made from almost any kind of flour.

In general, flour from hard wheats will give better results than that from soft wheats. A skilful bread-maker will, before passing final judgment on the merits of any given flour, vary the conditions of making the dough and preparing it for the oven, until those best suited that particular flour are found. After the conditions for a flour have been found, assurance that the bread will always be good can only be had by using always the same proportions of ingredients and the same temperatures. If the ingredients are accurately measured, and the conditions of raising, kneading, and baking are carefully controlled, success can be achieved with little experience. The commercial baker recognizes that certain types of flour which may not give him the desired results in bread-making are excellently adapted to the production of pastry. The housewife usually demands that the flour which she uses shall be good for both bread and pastry—a condition almost impossible to fulfil because of the different texture which the products ought to show.—R. W. Thatcher, University Farm, St. Paul.

To Yellow Lace.

Secure from your druggist five cents worth of ochre powder.

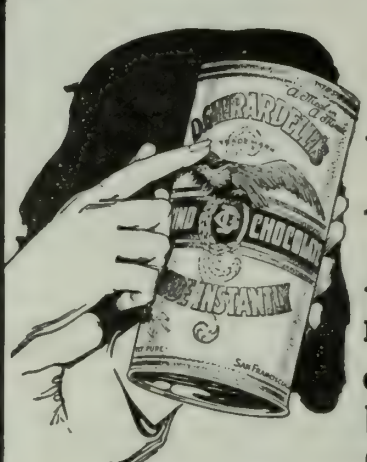
Have the lace well shaken out and put it loosely into a box with the ochre. Fasten on the cover and shake the box thoroughly for two or three minutes, remove the lace from the box and brush out the loose powder until the color is even.

The amount of ochre required depends on the amount of lace to be colored and the depth of color desired. One even teaspoonful will color a medium-sized lace collar, while one or two teaspoonfuls will be needed for a large piece of lace.

Mull embroideries and other sheer materials may be colored in the same way.

Preparing Meat for Curing.

It is highly essential that all animal heat shall be removed from meat before an attempt is made to prepare it for curing. If the surface of the meat comes in contact with salt before all the animal heat is removed, it will have a tendency to shrink the muscles and form a coating on the outside which will not allow the generating gases to escape. Meat should never be frozen when salted, as the frost will prevent the proper penetration of the brine, and uneven curing will be the result.—W. H. Tomhave.



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Our Young Folks

The Little Button-maker.

Fulvia was stringing her buttons on a long thread. She had a beautiful collection of them which she had been saving ever since her mamma had told her of a button string she had had when she was Fulvia's age.

Fulvia's string had shiny red and gold and blue buttons upon it, and some that shone with all the colors of the rainbow. Aunt Annie sat down on the lounge beside her to admire the different colors.

"I wonder how buttons are made," Fulvia remarked. "Some day papa says he will take me to a button factory to see how they do it."

"That would be very interesting," said Aunt Anne. "By the way, Fulvia, I saw a very tiny little creature making a silk button today, and preparing to hang himself up by it."

"What, Aunt Anne?" Fulvia's eyes grew as round as one of her own buttons as she searched Aunt Anne's face.

"It's a fact!" her aunt laughed back. "He was a very tiny button-maker, not more than half the size of your smallest finger, Fulvia, and he made it with his mouth, not his hands! He was a little green and black striped caterpillar. Come up to my room, and I'll show you some that I am keeping in a glass jar."

They went upstairs together. "These caterpillars are hatched from eggs I found on the milkweed leaves," Aunt Anne explained. "This kind feeds almost entirely on milkweeds."

"But I thought caterpillars were always woolly," Fulvia said, as she looked at the shiny, smooth little creatures, neatly striped in yellowish green and black bands.

"Not all of them," said Aunt Anne. "Whether they are woolly or smooth, all the larvae of butterflies and moths are called caterpillars. Now look at

this wee one, Fulvia. That is only three days old, this one is six, and this other nine days old."

"My, how fast they must grow!" Fulvia's eyes again suggested buttons.

"Yes, if you had grown at the same rate, you would have been sixty feet tall by the time you were ten days old—ten times as tall as your papa is."

"Oh, my!" said Fulvia again.

"Now I am going to give this large one to you," Aunt Anne continued. "He is almost ready to make his little silk button, and you must keep your eye on him."

The striped caterpillar was placed in a jelly glass with a metal top set loosely upon it. "Several times a day you must raise this top gently to let the air in, and don't forget what I told you about keeping your eyes on him."

Fulvia remembered. But the little fellow evidently worked while she slept, for in the morning she found him hanging from the metal cover, and he was attached at that end by a tiny silken "button" he had spun in the night.

"Now keep watching," Aunt Anne urged her niece. "Almost any time he may turn into a chrysalis, and I should like to have you see the process."

This time Fulvia's watching was rewarded. She was peering into the glass when the great change came—the caterpillar's little striped coat split, the skin dropped away, leaving fastened to the tin cover of the jelly glass a smooth, beautiful green chrysalis, dotted with gold. Fulvia's eyes could hardly believe what they saw.

"Now in about ten days more you will see something just as wonderful happen again!" Aunt Anne told her.

Fulvia sighed at thought of ten days, but somehow they flew away as summer days have a way of doing. "Keep a sharp lookout!" Aunt Anne urged her. In the night, while Fulvia dreamed of butterflies, in her little swinging bed on the sleeping porch, the great change came. Swiftly down the back of the shiny green chrysalis the skin split, for it had grown too tight and small for the lovely thing that had been "growing its wings" in those days of waiting. From the cast-off skin a great brown butterfly, the kind we call the "Monarch," came slowly out. His beautiful red brown wings were crumpled and moist, and how bewildered he must have felt! He was fanning his crumpled wings softly, back and forth, back and forth, when Fulvia came downstairs and called for Aunt Anne with a little shout of joy. Together they took the Monarch out of the glass, placed him on a fern in the window, and then stood by to watch him. Soon the wings were spread to their full size, and the butterfly, poised on a fern front, was all ready for flight.

"You know he has a queer long, trunk, something like an elephant's, don't you?" said Aunt Anne. "Only it is very long and slim, and tightly coiled when he isn't using it to suck honey from the flowers. Some day, if we find a dead one, we will look at it under the microscope. And that beautiful, soft shine of the wings—that is made of fine 'dust.' See, I will let a tiny bit of it rub off on my fingers, and we will put that under the microscope. Each bit of dust is a shining scale, and they are put on his wings as evenly and overlapping as shingles on the roof."

Fulvia's eyes went from the Monarch to the fresh June greenness outside. She gave a little sigh—it was hard to

let the new treasure go. But—he had his wings now. And if she had been waiting, waiting all the days for the great change to come!

"Let's take him out, Auntie," she said softly.

"Yes, dear," said Aunt Anne.—Bertha Gerneaux Woods.

"I," she said, "can trace my ancestry back to armor and shirts of mail."

"I started to trace my ancestry back once," he replied, "but my wife made me stop when I got to shirt sleeves and overalls."—Judge.



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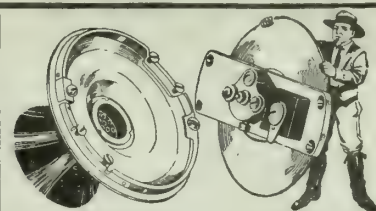
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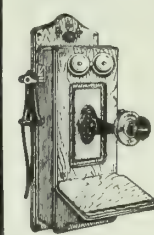
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THE MARKETS

San Francisco, Jan. 28, 1914.

Cereals.

WHEAT.

No further advance is noted in the local market, but all offerings are firmly held, and buyers are taking hold in better shape than formerly. The demand appears to be stronger in the north, where considerable grain is moving at prices satisfactory to growers.

California Club, ctl....	\$1.52 1/2 @ 1.55
Forty-fold	1.55 @ 1.57 1/2
Northern Club	1.52 1/2 @ 1.55
Northern Bluestem ...	1.70 @ 1.75
Northern Red	1.55 @ 1.70

BARLEY.

Spot barley is quiet and rather easy, as holders are coming out with liberal offerings, which have so far received only moderate attention. Values, however, are held at about the old level.

Brewing and Shipping...	\$1.37 1/2 @ 1.42 1/2
Choice Feed, per ctl....	1.25 @ 1.27 1/2
Common Feed	1.20 @ 1.25

OATS.

While there is little jobbing demand for feed all the time, there has been no important buying for some time, and the market is beginning to weaken perceptibly, though there has been no quotable change in values since last week.

Red Feed	\$1.65 @ 1.85
Seed	2.00 @ 2.10
Gray	Nominal
White	1.45 @ 1.50
Black Seed	2.50 @ 3.00

CORN.

Eastern grades are unchanged, with very little demand and no large offerings here, and there is no California white corn available at present. White Egyptian is offered in considerable quantities, and lower prices are expected.

California Yellow	Nominal
Eastern Yellow	\$1.82 1/2 @ 1.85
Eastern White	Nominal
Egyptian	1.70 @ 1.75
Milo Maize	1.70 @ 1.75

RYE.

There is no demand worth mentioning at present, but offerings are moderate and prices are nominally maintained at about the former level.

Rye, per ctl....	\$1.45 @ 1.50
Seed	1.65 @ 1.70

BEANS.

The bean market has commenced to pick up in good shape. The present movement is not unusually active, but numerous inquiries are coming out, and some good-sized sales have been put through at the advance of last week. All conditions are favorable for a strong and active market, as supplies in the trade are rapidly being exhausted, and there is no heavy stock left on the Coast.

(On wharf.)

Bayos, per ctl....	\$5.00 @ 5.15
Blackeyes	4.25 @ 4.35
Cranberry Beans	4.00 @ 4.25
Horse Beans	1.90 @ 2.15
Small Whites	4.75 @ 5.00
Large Whites	3.50 @ 3.60
Limas	5.00 @ 5.10
Pea	Nominal
Pink	3.00 @ 3.25
Red Kidneys	5.00 @ 5.15
Mexican Red	4.00 @ 4.15

SEEDS.

The seed market in general remains quiet, with prices unchanged.

Alfalfa	12 1/2 @ 15 c
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3 3/4 c
Canary	7 @ 7 1/2 c
Hemp	2 1/2 @ 3 c
Millet	2 1/2 @ 2 3/4 c
Timothy	7 1/2 @ 8 c
Yellow Mustard	Nominal

FLOUR.

The local flour trade continues on about the average scale, prices being steadily held at the same level as for some time past.

Cal. Family Extras ...	\$5.60 @ 6.00
Bakers' Extras	4.65 @ 5.20

Superfire	3.90 @ 4 1/4
Oregon	4.90

Hay and Feedstuffs.

HAY.

No change worth mentioning has taken place in the local hay market, though a little more is coming in, owing to a growing desire to sell among country holders. Until the last few days the demand has been very poor, and arrivals have been cleaned up with difficulty, though prices have been comparatively low. With clear weather, a somewhat better demand is expected here, but this is unlikely to affect prices materially, as the outside demand is light, and stocks are said to be much larger than was formerly realized. Dealers predict, in fact, that a great deal of hay will have to be carried over into next season; and with all conditions favorable for an extremely large crop, there is little prospect of high prices being realized. Offerings of alfalfa are increasing, causing an easier feeling in this line.

No. 1 Wheat, or Wheat

and Oats	\$13.50 @ 14.50
do No. 2	11.00 @ 13.00
Lower grades	9.00 @ 11.00
Tame Oats	11.00 @ 15.00
Wild Oats	9.00 @ 12.00
Alfalfa	8.00 @ 9.00
Stock Hay	7.00 @ 9.00
Straw, per bale.....	75 @ 95c

FEEDSTUFFS.

Cocoonut meal shows a further decline this week, while other lines of feed stand as before. The demand is light, and no active demand is expected in the near future.

Alfalfa Meal, per ton....	\$18.00 @ 19.00
Bran, per ton	24.00 @ 25.00
Oilcake Meal	34.00 @ 35.00
Cocoonut Cake or Meal..	26.00 @ 27.00
Cracked Corn	41.00 @ 42.00
Middlings	33.00 @ 34.00
Rolled Barley	27.00 @ 28.00
Rolled Oats	31.00 @ 32.00
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

The heavy storm of last week, extending through southern California, has limited supplies of garden truck from both nearby districts and the south. Good offerings are extremely scarce, and even ordinary stock in most lines is held at firm prices. One feature of the market is the arrival of several small lots of asparagus, which sold readily at high prices. Southern tomatoes are scarce and high and Mexican stock has sold up to \$3 per box, but with more due to arrive a decline is expected. Green peas are higher, and while string beans do not bring the extreme figure of last week, ordinary stock is higher. Eggplant has dropped back a little. Lettuce and celery in good condition are both very scarce, and prices show quite a sharp advance. Cabbage, cauliflower, and sprouts are moving well at the old prices.

Cabbage, per ctl....	\$1.25 @ 1.50
Cauliflower, dozen	25 @ 40c
Green Peppers, lb....	4 @ 5c
Carrots, per sack	55 @ 65c
Green Peas, Southern, lb.	10 @ 15c
String Beans, lb....	10 @ 12 1/2
Tomatoes, Southern, crate	75c @ 1.50
Eggplant, lb.	4 @ 7c
Sprouts, lb.	4 @ 6c
Celery, large, crate....	1.75 @ 2.25
Rhubarb, box	1.00 @ 1.75
Lettuce, crate	75c @ 1.25
Mushrooms, lb.	8 @ 14c
Asparagus, lb.	75c

POTATOES, ONIONS, ETC.

Prices show very little change, but the market continues very firm in all lines, with light supplies. The outlook for potatoes is somewhat uncertain, but onions are very scarce, and are being brought from distant points, a car of Nebraska stock having arrived the first of the week. The Oregon supply is rapidly cleaning up at advancing prices.

Potatoes:	
River Whites	\$1.00 @ 1.30
Sweet Potatoes, per ctl....	1.25 @ 1.60
Oregon Burbanks	1.20 @ 1.50
Onions: Yellow River, ctl.	3.00 @ 3.25
Oregon	3.25 @ 3.50
Garlic, per lb.....	7 @ 10c

Dairy Produce.

POULTRY.

A much weaker feeling is reported, with large arrivals of Eastern chickens. Until the last day or two local stock was in light supply, but is now coming forward more freely, and while the demand is good it is doubtful whether present prices will be maintained. So far, however, there has been no quotable drop.

Large Broilers	23 @ 24 c
Small Broilers, per lb....	27 @ 28 c
Fryers, per lb....	20 @ 22 c
Hens, extra, per lb....	19 @ 20 c
Hens, large, per lb....	18 @ 20 c
Small Hens, per lb....	18 @ 19 c
Old Roosters, per lb....	14 @ 15 c
Young Roosters, per lb..	19 @ 20 c
Squabs, per doz.....	\$2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @ 23 c
do dressed, choice....	25 @ 27 c

BUTTER.

Offerings of local stock have been light for the last week, and while large supplies from Australia have been marketed, prices on both local grades have picked up a little.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	29	30	31	33	32	32
Firsts	27	28	28	29	29	29

EGGS.

Eggs took a sharp drop a few days ago, but have since picked up, though prices for the week as a whole are lower than last week. Storage stock is said to be completely cleaned up, but the production is gradually increasing, and a few weeks of good weather will doubtless bring a further decline.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	38	33	36	35	36 1/2	35
Selected						
Pullets.....	37	32 1/2	34	34	35	34 1/2

CHEESE.

Supplies in all lines are short, and values keep up rather firmly, though the only advance is in Y. A.'s. Monterey cheese finds little demand at these prices, and it is expected that larger offerings will cause a sharp drop within the next few weeks.

Fancy California Flats, per lb....	18 c
New Young Americas, fancy....	18 c
Monterey Cheese	19 @ 20 c

Deciduous Fruits.

There is little new to report in the apple market, aside from the fact that the local demand has improved considerably since the rain stopped. The movement, however, is only moderate in all lines. Prices are steadily held at the old level.

Apples: Spitzenbergs	\$1.25 @ 1.70
Greennings	1.00 @ 1.20
Bellefleur	1.15 @ 1.50
Newtown Pippins	1.40 @ 1.75

Dried Fruits.

The principal feature in the local dried fruit market is the larger movement of peaches, which are now beginning to receive some attention. The comparatively low prices made recently in the East have brought out a fair demand, and in view of the scarcity of most other fruits the indications are favorable for a good clean-up. The revival of Eastern trade has stimulated interest among the packers, most of whom now have their buyers out to pick up odd lots remaining in the country, and considerable business has been done. The best price offered, however, is 4c., a number of the larger holders preferring to accept this figure rather than risk a hold-over. The outlook for an advance is rather doubtful, though a good many small lots are firmly held and the aggregate supply is not heavy. Most other fruits are about out of growers' hands, and prices are accordingly more or less nominal. The New York Journal of Commerce says:

"Although there is no large buying at present in any line, the demand has of late showed considerable improvement, especially from the country trade. Orders are made with strict reference to immediate needs, and the bulk of the business being done is in spot goods in lots of anywhere from

50 to 200 boxes, many repeat orders being reported. The character of the business is said to show that the volume of consumption is fully up to, if not something above, the average, but in spite of the general improvement in business sentiment, dealers in California products are still following an extremely conservative policy.

"The Coast situation in all lines is reported to be stronger than for many years at this time. Stocks of all staples are pretty well out of growers' hands, and holdings of packers are reported to be much below normal.

"California prunes are statistically in a strong position. Many packers have nothing to offer for shipment from the Coast, and the few who have stock are holding for the better market which they feel confident will come with the opening of the spring season in the Eastern markets. Store stocks are not abundant, especially in the popular sizes, and are held with confidence. Peaches show an upward tendency, with a better demand reported from the Coast in Western and Southern markets. Buyers here will not need much stock until May or June, when the bakers' supply trade is expected to get busy, and consequently are placing few orders, taking chances on a higher market in the interim. Apricots, being in small compass everywhere, are firm, though there is not much demand from local buyers at present."

Evap. Apples, 1913	6 1/2 @ 8 c
Apricots, 1913	10 @ 13 c
Figs: White	Nominal
Black	Nominal
Calimyrna	4 1/2 c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4 1/2 c
Seedless Sultanias	4 1/2 c

Citrus Fruits.

The heavy rains which visited the citrus districts during the past two weeks have had the effect of cutting down shipments, as the growers have been unable to get into the groves to pick fruit. The Eastern markets have been lower in price, causing some red ink sales, but on the average good oranges are bringing from \$1.20 to \$1.60 per box f.o.b. California.

Lemons are in good demand in spite of the fact that foreign lemons are offered in large quantities, the prices for good stock in California being \$2.75 to \$3 per box.

Shippers look for better demand at higher prices as soon as the Florida fruit is out of the way. Usually the January and February sales are not very satisfactory, but beginning with March prices are better and shipments go forward with a rush. So far no frost or hard winds have bothered the growers, and the fruit is in excellent condition.

The only changes worth mentioning in the San Francisco market are declines in grapefruit and tangerines. Mandarin oranges are about cleaned up. Lemons, as well as oranges, are moving off very slowly, and prices, though not notably lower, are maintained with difficulty.

Oranges: Navels	75c @ \$2.00
Tangerines, crate	75c @ 1.25
Grapefruit, seedless	1.25 @ 2.50
Lemons	1.75 @ 3.50
Limes	3.50 @ 4.50

Nuts, Honey, Hops, Etc.

NUTS.

Values are entirely nominal as far as growers are concerned, as practically everything is cleaned up. The scarcity of supplies everywhere keeps values firm, but the demand at present is very small.

Almonds:	
Nonpareils	19 c
I X L	18 1/2 c
Ne Plus Ultra	17 1/2 c
Drakes	15 1/2 c
Languedoc	15 1/2 c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15 1/2 c
Budded	19 c
No. 2	11 1/2 c

HONEY.

The local demand is very light, and the feeling in regard to prices is rather easy, as some dealers are anxious to dispose of supplies held over from before the holidays. Offerings from outside points, however, are very small.

Comb. white	15	@16	c
Amber	11	@12	c
Dark	9	@10	c
Extracted: White	8	@9	c
Amber	6½	@7	c
Off Grades	5	@6	c

BEESWAX.

Values remain nominally as for some time past, but there is hardly enough trading to establish a definite basis of prices, both demand and supply in the local market being very small.

Light	30	@31	c
Dark	25	@29	c

HOPS.

The situation remains as before, little new business having gone through this week. A somewhat firmer feeling is reported, as there seems to be a demand in consuming markets, while supplies are light and growers on the Coast who still have anything left are disposed to hold.

1913 crop	20	@22	c
1914 crop	14	@16	c

Live Stock.

Some large sales of cattle for feeding have been closed in various districts in the last week, prices being reported at about \$35 to \$50 per head. Calves are scarce in the local market, and have been marked up, sheep and lambs also being a little higher, and dressed mutton is also very firm.

Steers: No. 1	7¼	@7½	c
No. 2	7	@7¼	c
Cows and Helpers: No. 1	6¼	@6½	c
No. 2	5¾	@6	c
Bulls and Stags	2½	@5	c
Calves: Light	7¼	@8¼	c
Medium	7½	@8	c
Heavy	6½	@7½	c
Hogs: Grain-fed, heavy	7¾	@8	c
150 to 250 lbs.	8½	@8¾	c
100 to 150 lbs.	8¼	@8½	c
Prime Wethers		5	c
Ewes	4½	@5	c
Lambs	6½	@7	c

DRESSED MEATS.

Steers	12	@12½	c
Heifers	11½	@12	c
Veal, large	11	@12	c
Small	13	@14	c
Mutton: Wethers	10	@11	c
Ewes	9	@10	c
Suckling Lambs	12	@13½	c
Dressed Hogs	13½	@14	c

HIDES.

Values remain about as before, with supplies scarce and a very fair demand for practically all descriptions, though there is no heavy movement.

Heavy Steers, over 56 lbs	15	c
Medium	14½	c
Light Steers, under 48 lbs	14½	c
Heavy Cows, over 50 lbs.	14½	c
Light Cows, 30 to 50 lbs.	13½ @ 14½	c
Kip	14½ @ 15½	c
Veal	17½ @ 18½	c
Calf	17½ @ 18½	c
Dry—		
Dry Hides	25½ @ 26½	c
Dry Kip, 10 to 15	24½ @ 25½	c
Dry Veal, 5 to 10	29½	c
Dry Calf, 7 down	29½	c
Horse Hides—		
Salt: Large		\$2.75
Medium		2.25
Small		1.00
Colts	25 @	50c
Dry	75 @	2.00

WOOL.

A very fair buying movement is reported in the Eastern markets, but California wool has not been noticeably affected. Local buyers are not in the market, and no new developments are expected until the spring clips are offered.

Northern mountain	7	@9	c
Southern mountain	7	@8	c
Defective	4	@6	c
Lambs	7	@10	c

HORSES.

The local horse market has been very adversely affected by the heavy rains, and users of horses have been conspicuously absent from most of the

recent sales, most of the offerings being sold to dealers, who appear to have some confidence in the future of the market. The clearing of the weather may give rise to a stronger local demand, and this is also strongly favored by the reduction in the cost of hay, etc., but no great activity is expected for the next month or six weeks. The prices paid recently have been fair, considering the general conditions, but only the best of the offerings have sold up to the quoted figures. No large shipments are coming in this week.

Heavy drafters, 1700 lbs. and over

Light Drafters, 1500 to 1650	225	@250
Chunks, 1350 to 1500	150	@200
Wagon Horses, 1250 to 1350	100	@150
Delivery Horses, 1050 to 1250	100	@125
Desirable Farm Mares	75	@100

MULES.

1200 lbs.	\$200	@250
1100 lbs.	150	@200
1000 lbs.	125	@175
900 lbs.	75	@125

CHATFIELD & SMITH
Biggs, Cal., Jan. 1914.
Messrs. W. C. Price & Co.,
San Francisco.

Dear Sirs: We want to say to you that for promptness in sending returns and fairness in prices, we have never dealt with a better house.

Respectfully,

CHATFIELD & SMITH.

This letter shows what our shippers think of us. If you send us your shipments of butter, eggs, live and dressed turkeys, chickens, dressed calves, hogs, grain, hay, potatoes, corn husks, dried fruits, broom corn, etc., we will do our utmost to give you the same satisfaction that we have the firm of Chatfield & Smith. Mark and consign all shipments to the old and reliable firm of W. C. PRICE & CO., General Produce and Commission Merchants, 211-215 Clay St., San Francisco.

PUBLISHER'S DEPARTMENT.

ADVERTISERS ARE GOOD.

It is a source of gratification to the publishers of a paper to have advertisers pleased with the results of the use of the columns of his journal. To go a step further, it is pleasant to know that readers are pleased with the business transacted with advertisers. The following note from a subscriber at Guerneville tells of his satisfaction in a stock deal: "A short time ago I was in the market for a pure-bred bull. I answered several of your advertisements, which brought the desired results."

"Enclosed find the price for a copy of 'One Thousand Questions in California Agriculture Answered.' I already have one copy, but find I can use another." This is what a subscriber writes us this week. Every reader of the PACIFIC RURAL PRESS should have a copy of this very valuable book. Send us your order and have your copy on hand, ready for reference when the spring work starts. You will need it then, if not before.

In connection with the testimonial letters from advertisers that we printed last week, and others printed in this issue, we are getting out a little folder, which we expect to have ready for distribution in a few days. To anyone who contemplates advertising we will be glad to send a copy. The RURAL PRESS is proving a great result-getter for advertisers, and the best proof is from those who have been or are now using our columns.

The increased planting of tobacco in the San Joaquin valley has been the cause of considerable anxiety on the part of the growers in finding a market for the crop. The Bollman company, of San Francisco, who it

was thought would purchase the entire crop, state that they are unable to handle it, as the quality is not what it should be. Notwithstanding this, however, a late dispatch from Fresno says that a New York firm is in the field and stands ready to purchase the crop at better prices than was offered by the Bollman company. It is thought that arrangements may

be made with this company for future contracts. The crop now on hand is said to be worth in the neighborhood of \$150,000. The interest in tobacco seems to be spreading to all parts of the State, as a report from Grass Valley says that there will be several small patches tried out this year as a result of satisfactory experiments last year.

ARE YOU SHORT OF WATER?
CONSULT ME!

I am able to locate underground streams and I am willing to contract with you for boring well under the obligation of "no water no pay." If the well I order to bore has not the capacity agreed upon you have to pay nothing.

J. von GAL S., Box 489, Lindsay, Cal.

43 Years of Leadership

SINCE 1870 the PACIFIC RURAL PRESS has been the leading agricultural and horticultural journal of California. It is conceded to be one of the best edited and printed farm papers in the country. It has, we believe, the largest and best paid circulation of any farm weekly on this Coast. During its 43 years of life it has done much to help in the development of agricultural interests in this vicinity. It is the favorite farm paper of the best farmers and the favorite advertising medium of those who cater to the farmer's wants.

Read what some of the leading nurserymen say about it:

The Pacific Rural Press.
Fresno, California, Jan. 1, 1914.
Gentlemen—It gives us pleasure to congratulate you on the good work being done by your paper, particularly in the Editorial Department. The Pacific Rural Press has long been regarded by us as the best horticultural journal in the West.
The advertising space we have used in your paper has always given us good results. Yours very truly,
KIRKMAN NURSERIES.
By Wm. T. Kirkman, Jr.

Pacific Rural Press.
Los Angeles, Cal., Jan. 6, 1914.
Gentlemen—We are receiving more responses to our ad. in your paper this year than ever before, which would indicate that you are increasing your circulation among those interested in our line. We also wish to state that the inquiries coming from your people are nearly all good live inquiries and would indicate that the parties mean business.
Yours very truly,
THE ROEDING & WOOD NURSERY CO.
By W. R. Wood.

Pacific Rural Press.
Chico, California, Jan. 2, 1914.
Gentlemen—We have your favor of the 31st, and in reply will state that in our line we get better results from advertising in the Pacific Rural Press than in any other publication that we use.
Yours very truly,
CHICO NURSERY CO.
By E. Wightman.

Pacific Rural Press.
Fresno, California, Jan. 1, 1914.
Gentlemen—We are well pleased with results obtained through the medium of our advertisements in the Pacific Rural Press. It is one of the first papers on our list when we place our advertising for the season. We consider your paper very ably edited, nicely gotten up and arranged, dealing at all times with up-to-date fruit growing facts and conditions. We wish you all kinds of success for 1914. Yours truly,
THE FRESNO NURSERY CO., INC.
By Chas. A. Chambers, Sec'y-Treas.

Pacific Rural Press.
Fresno, California, Jan. 8, 1914.
Gentlemen—Your valued favor of the 30th ult. received. It is hardly necessary for us to tell you that we have always been friendly disposed toward the Rural Press. This has been indicated by the amount of advertising that we have placed in your paper. We are very much pleased to say that in recent years we have noted a decided improvement in the efforts of the Press to get in close touch with the horticulturists and agriculturists of California. Under the present management the paper has made many improvements, not only in the general appearance of the sheet, but in gathering valuable data which we are quite sure is appreciated by all of our readers.
It is not necessary to comment upon Prof. Wickson's work, because that has always been up to the standard; but it is a pleasure to note that he is so ably assisted in getting out this publication in so much better shape than former years.
We have already noted quite a little improvement in the returns that we are getting from our advertising, and in view of the enterprise your people are exercising in the entire make-up of the paper we expect to have better returns this year than ever before. With kindest regards, we beg to remain,
Yours very truly,
FANCHER CREEK NURSERIES.
By Geo. C. Roeding.

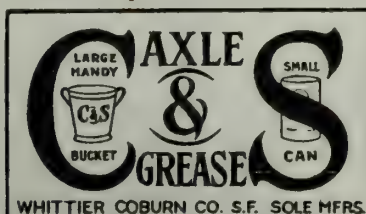
The PACIFIC RURAL PRESS can help you dispose of your nursery stock this season. Write us at once.

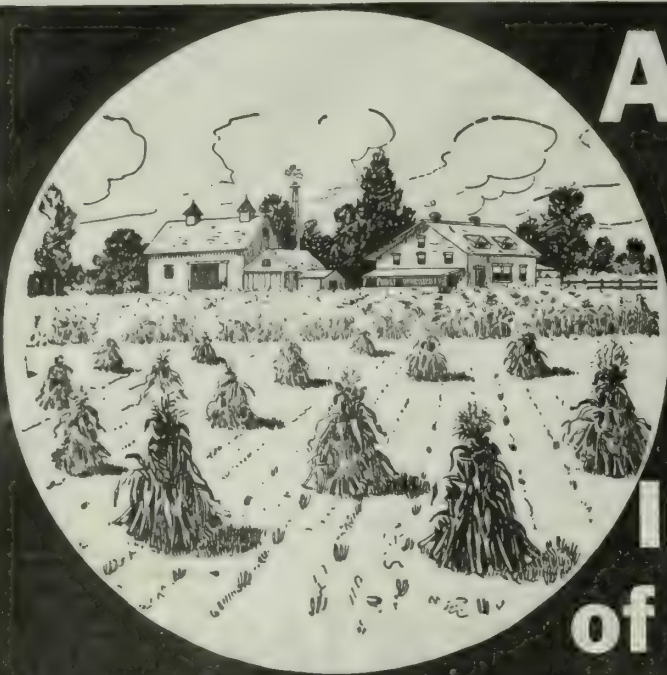
Address, Advertising Dept.

Pacific Rural Press

420 Market Street

San Francisco, Cal.





A Field Full of Crops Instead of Stumps

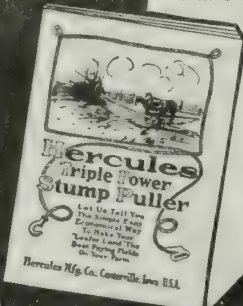


Mail
Coupon
Now For
This Great
FREE
BOOK

\$100.00 for Every \$1.00 If
You Pull Out the Stumps with the
HERCULES All-Steel Triple Power
Stump Puller

Let me *prove* it to you. Just mail me your name and address so I can send you my fine book, free. Use the coupon—or just a postal. On page 45 of my book it's all figured out for you in black and white. See how much your loafer stump land—*robber* land, is costing you. See how much it decreases the value of your land. See how it keeps you from farming *all the acres you pay taxes for*. Face the facts—and know how *vitaly important* it is to you to pull out every stump if you want to cash in on all your possibilities—if you want to get all the money you *should* get from your land. My book *proves* that by pulling the stumps, you can

Every Casting
Guaranteed
for 3 Years
Against Break-
age from Any
Cause, Flaw
or No
Flaw



Make \$1281 Profit the First Year on 40 Acres
and \$750.00 Profit Every Year After

The estimate is low. You can do even better. Remember, you plant on virgin soil when you plant where stumps stood.

An Acre of Stumps
Pulled in a Day

That's what *you* can do with a Hercules. And you won't have to pass by any of them. Big or small, they *can't* resist the terrific pull of the triple power. And the Hercules won't break. It gives a greater pull than a locomotive—yet the strain is so scientifically distributed over the All-Steel Hercules that we *can* and *do* guarantee it against breakage for 3 years.

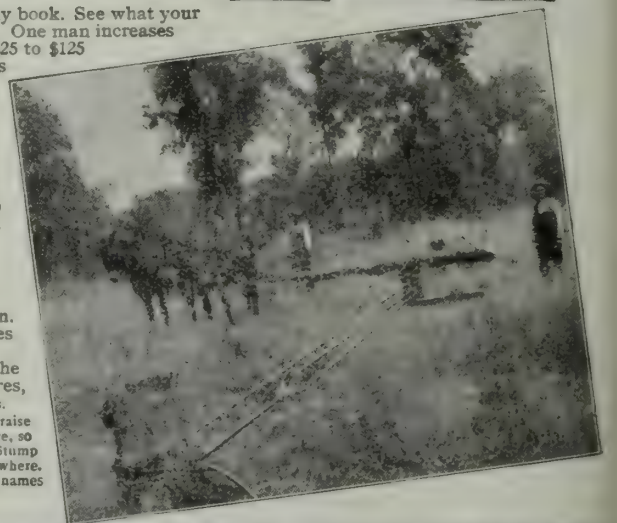
My 3-Year Guarantee

If any casting of your Hercules breaks within 3 years from date of purchase, send in the broken

part and we will replace it free, whether the break was your fault or the fault of too great a strain or a flaw or *anything*. Even with the great power and strength of the Hercules, it is 60% lighter than other pullers.

What Others Have Done

Read the many letters in my book. See what your brother farmers are doing. One man increases the value of his land from \$25 to \$125 per acre. Another makes \$1000 by pulling hedge fences. Another pulls stumps for 4c each. And so on. Don't you want the facts? Don't you want to know the easiest, quickest, cheapest, safest and surest way to clear out every stump in *your* fields?



Rush
Coupon
for Book and
New Low Price

Get My Free Book and Low Price

To the first buyer in each locality I am making a very personal price proposition. If I get one Hercules in each locality, more will surely follow because of Hercules quality and efficiency and money-making advantages.

I want to hear from you. Just simply send your name and address on the coupon or on a postal. My new book is a beauty. See the real pictures, from 25 different states, of big stumps the Hercules has pulled out like you would pull weeds.

I'll send the book and special price offer by return mail. I'll tell you the best crops to raise on virgin land where stumps were before. I want to get my free book to you at once, so that you can read the remarkable facts about the Hercules All-Steel Triple Power Stump Puller and how it does such splendid work making big profits for owners everywhere.

Mail me the coupon or postal right now, before you forget, or take down the names and address and write me soon. Address me personally.

Mr. B. A. FULLER, President
Hercules Manufacturing Company
812 22nd Street, Centerville, Iowa

B. A. FULLER, President
HERCULES MFG. CO.
812 22nd St., Centerville, Ia.

Dear Sir:

Please send me free book about the Hercules Triple Power All-Steel Stump Puller. Also your low price to first purchasers.

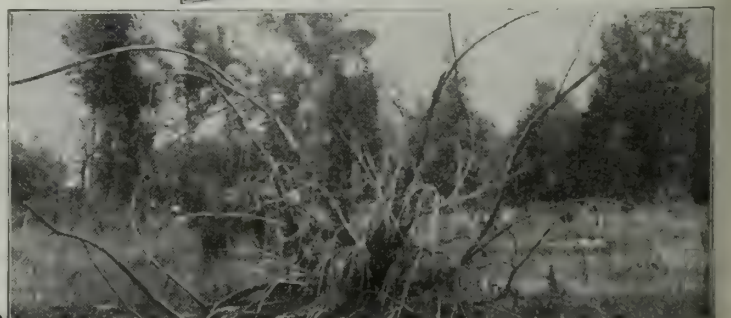
Name _____

Town _____

State _____

Route No. _____

Many More
Pictures in
Our New
FREE
Book



THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 6.

SAN FRANCISCO, SATURDAY, FEBRUARY 7, 1914.

Forty-Fourth Year.

The Average Dairyman's Barn.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

As the dairy industry grows we see more progress being made in the construction of dairy buildings and not only do we see more farmers spending money, for that part of the dairy, but what is of as much interest, we find that the majority of plants which have been built along practical lines with a view of sanitation, are highly profitable to their owners, showing that the higher standards which are being set will not put the dairymen out of business.

It is true that for many years the dairymen were not paid for quality, but rather for the quantity, yet in more recent years there has been a growing tendency on the part of the consumer, to demand a higher class and more sanitary foodstuff, with the result that the quality of milk, especially of that sold to the city trade, has a great deal to do with the price paid, and it is thought that it will only be a short time until the same thing will be true with the dairyman, who sells his product as butterfat, for with a universal cream grading system, in operation the man with sanitary conditions will receive a higher price than the one who has paid little or no attention to that part of his business.

This does not necessarily mean that all dairymen will be compelled to erect strictly modern and costly buildings, for unless there is a big improvement in prices of milk and milk products the investment in such buildings and equipment would not be justified on small dairies, as the overhead charges would consume the large part of the profits.

An illustration of this was recently seen, on a dairy that was supplying sweet milk to the city market. Everything about this plant was as convenient and sanitary as money and brains could build. The milk barn was well ventilated with windows along the side, good ventilation and light from the roof, good drainage, cement floors, gutters and mangers, a fine supply of water for flushing purposes, in fact the owners had spared no pains in making the plant one of the finest in the State. The barn had a capacity of 120 head and it was planned to eventually milk between 200 and 240 cows, but at the time of our visit only 65 cows were being milked and here is where the rub came in, for while the overhead expenses were as large, with the exception of an extra milker or two, as they would have been if the plant was running at full capacity and consequently when the owner was asked if the property was paying he stated that it was not.

Eventually this plant will, without doubt, pay as the product is sold at a premium, of three cents a gallon, on account of its being

more sanitary than the average dairy and with everything built with an idea of labor saving there is no extra cost in producing, above what would be found on any dairy where an inferior product was being produced.

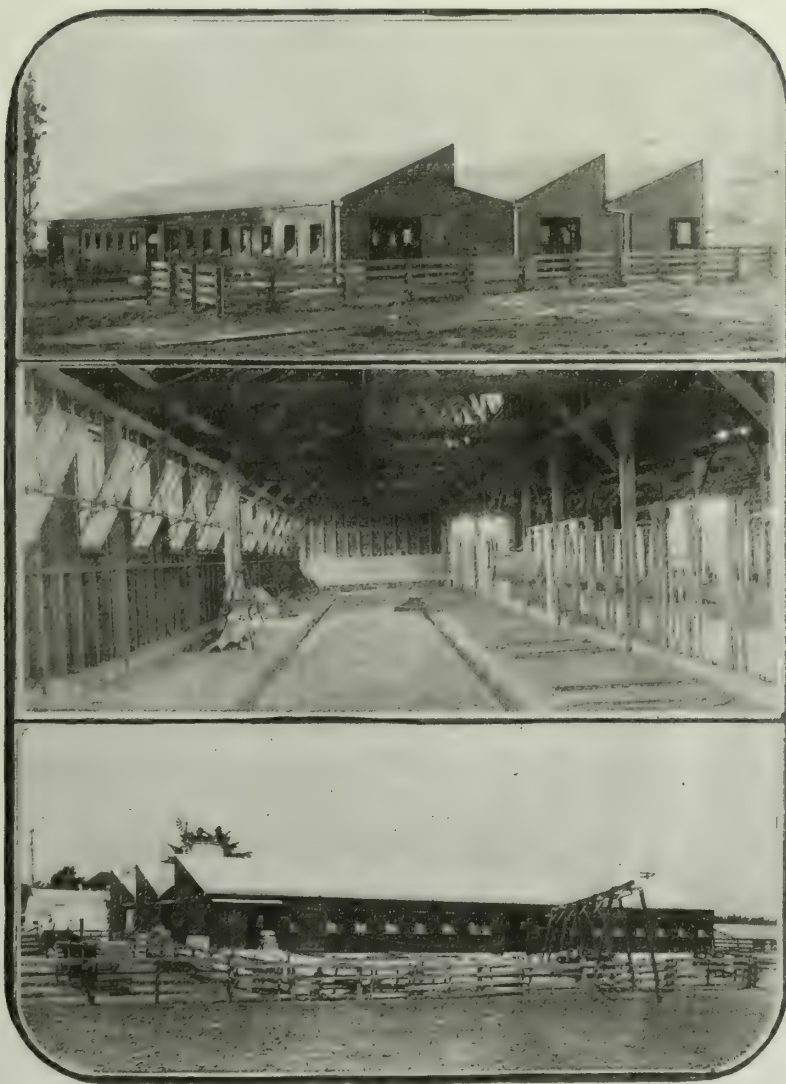
The point brought out from the above illustration, is that the smaller dairyman cannot afford to have so much capital tied up in equipment, as is commonly seen in these larger plants, but will have to work out plans that will allow him to produce a high-class product with a reasonable amount of expenditure in equipment, also one that may be added, too, later if desired.

Such a plan seems to have been found in what is called the saw-toothed barn, illustrations of which are shown on this page. This type of barn may be built for one string or a hundred, as desired, and still be well ventilated and sanitary, for each unit is provided with windows, regardless of the others.

The top view of one end and the back, shows the outside construction and shape of the roof. This particular barn consists of three units and has a capacity of 120 cows. Both the front and back of the building are supplied with windows which provide a part of the ventilation and lights and on the front of each unit between the top of one roof and the bottom of the next one another row of windows is provided, as may be faintly seen in the middle view, above the stanchions. This middle view shows the last unit, that has been added, and also shows how the plans allow for the next unit, when it is desired. As will be noticed there are two gutters in this unit and only one row of stanchions, but the runway between the cows has been finished, as well as the stall room for the next string, when needed. The back wall shown is set on a cement foundation, where holes were left for stanchions and also will eventually be one wall for the manger.

When the time comes for enlarging the barn, the back wall containing the windows will be removed, with the exception of the upright braces, and another shed roofed unit will be added. Instead of the cows having their tails toward each other, in the next unit, they will be facing each other, and so on alternating as long as one wishes to continue building.

On the left hand side, of the lower picture, will be seen sacks of grain. That end is provided with a cement floor large enough for storing or mixing grain and can be driven into with a wagon, if desired. This view also shows the manner in which the solid manure is disposed of and by looking again at the center view it will be seen that the carrier runs through the center of the barn and also down the middle, finally to be dumped in wagons at the back end of the



Milking Barn on Stenzel Bros.' Dairy, San Leandro; C. F. Wieland, Designer.

(Continued on Page 181.)

Pacific Rural Press

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E. J. WICKSON - Editor
FRANK HONEYWELL - Manager
W. H. SCHRADER - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Feb. 3, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.02	23.60	25.39	54	36
Red Bluff	.00	24.27	14.87	64	32
Sacramento..	.00	15.18	11.17	58	38
S. Francisco..	.00	21.82	18.03	64	44
San Jose.....	.00	13.50	9.35	62	32
Fresno	.00	8.52	5.31	58	36
Independ'ce ..	.00	12.37	5.22	54	22
San L. Obispo	.00	26.11	11.04	68	36
Los Angeles..	.00	14.93	8.42	78	44
San Diego.....	.01	6.58	5.40	68	42

The Week.

What are you going to do with the mass of greenery which is now springing up in such lushness all around you—the product of this year's generous rainfall? You must do something. You cannot stand still or you will be grown into a leafy prison in a few days. Of course you can get a bunch of goats—just as Jack London has done, so that he can keep his head above the botanical barriers which rise so quickly on his warm Sonoma hillsides; but it is not every man who can make a goat of his own inactivity. It is to be supposed that our fruit growers know what to do with winter greenery; they have been so amply exhorted about cover crops that everything good looks green to them, and if they had the sea over their property they would doubtless try to plow it in. We preachers certainly have the fruit growers and grain farmers on the move, and our present purpose is to attack the smaller fellows who have only gardens and paddocks in their horizons.

In the first place, you can eat your own way out of quite a lot of greenery—just as a goat does, if you will. We happened to be up in the country a few days ago and overheard the housewife laboring with her lord on the subject of something to make a salad; they had been living on roots until they could taste the sub-soil, and the good-natured man, knowing well how much feminine content has to do with a farmer's success, consented to leave his pruning and drive over to a railway station to see if he could not shake a few heads of lettuce out of the train-boy. We did not wait to see the results, but we saw several sermons in the opening of the incident.

What a Winter Garden Would Do.

In the first place, of course, no man, unless he happens to have only heavy soil on a frosty

bottom, where the ground is either flooded or frozen hard, need go without a patch of lettuce or of endive, which is even better salad-timber than lettuce in very cold weather, or of edible varieties of borecole, or of cress, etc.—not to speak of young beets, chard, spinach, cabbage, peas, etc., which can be had all winter for boiling. Even a small piece of sandy loam, which can be found somewhere on nearly all farms, or can be made without much expense, will grow fresh vegetables for winter use in all our valleys and foothills, if the seed is sown in the fall as soon as the ground is deeply moistened. How much easier for you, my dear man, to keep your domestic sun without a spot, to be a little busy in the fall, rather than try to remove a spot by neglecting your pruning and lathering across the mud of the valley, trying to pull train-worn lettuce from a bed of peanuts and cigarettes in the end of the smoking car!

The California Landscape Is Covered with Winter Salad.

But this exhortation to fall and winter gardening as a domestic smoothing-iron is not the particular point we had in view. The fact is that you can be your own goat when you learn how. While we were overhearing that salad order the other day we were looking through a sun-filled doorway upon banks of greenery pointed everywhere with the signs of wild salad plants which nature was displaying and saying, as plainly as in that dream of old: rise, Peter, cut and eat! Did we say so then? On your life, No! As the order is going forth for shop-worn lettuce do you think we would offer any remarks upon crisp dandelions and young mustard which we could see amid the tufts of new grass? No indeed; not even were the crystal dew drops upon their tender foliage sparkling diamonds, would we suggest aught at a moment so inopportune; we would let the old man wallow in the muddy road all day, chasing the dream of boughten lettuce, for even at such a price his peace of mind would be cheap as a golden candlestick at a bargain counter. But now, well up in a steel-frame skyscraper, with the entrance door way yonder, guarded well by protecting servitors and with the fire-escape at our elbow, we feel safe in saying that any housewife who will order leathery lettuce which has traveled a night and a day, perhaps, in a turpentine pine crate and has then been pounded, drawn and twisted through various retailing places and processes, is simply blind to the blessings of winter life in California.

One of the prettiest sights of last spring in northern Italy was the trooping of pretty girls out from the farming village in the early sunlight, equipped with baskets and long knives, singing and rallying each other with musical raillery which we could not understand, while they rushed here and there along the roadsides and ditch banks in good natured strife as to which would capture the best of the wild salad plants which seemed to be rather rare, as one might expect after generations of such bright-eyed quest. We remembered this as we were looking through that sun-filled doorway, and wondered with what exclamations of surprise and gladness those Italian girls would throw themselves on such a bank of green and gold—the gleam of the dandelions and the dark verdure of the mustard—and how soon the home atmosphere would be fragrant with the light essences of the salad dressing and the more

sustaining odors of the boiling greens—and how little time would be lost to the pruning!

We surely need to learn more about the bountiful provision which nature makes in California for human sustenance. The things which come in summer, chiefly in the category of wild fruits, are much better known than the gifts of winter moisture and warmth. Probably very few people know of anything you can gather in the winter save the mushrooms, and many are properly very guarded in gathering them. When there is absolute safety in mushrooms should be taught in our grammar schools, and, besides that, instruction should be given in the edibility and culinary treatment of other plants which spring up in such profusion at the touch of rainfall.

Winter Treatment of Garden Weeds.

But the foregoing exhortation to the en-kitchening of wild plants is not really the sermon we intended to preach. We started to point the contrast between the large farmer's appreciation of cover crops and the small farmer's misunderstanding of the beneficence of garden weeds. We do not want land which does not grow good weeds. To people who come asking advice about buying land in the rainy season, we always put the question: "What kind of weeds does it grow?" Good large weeds, excepting a few which indicate alkali, are nature's certification of the quality of agricultural land. Moisture is abundant, heat is ample for most weeds—if there are not good weeds, what is the matter with the land? Of course there is occasionally a piece of land which has been kept so clean for years that all seed has sprouted out of it, but that is not frequent. If it is a piece of garden land which has been thoroughly worked and generously enriched as it ought to be, the weed growth on it should be glorious and should be used to great advantage. But of course weed growth in a garden should always be kept under intelligent control. Weeds should not be allowed to grow between vegetables, nor should vegetables be forced to grow in an environment of tall weeds. In the intervals of rest of each patch of ground, between its successions or rotations, a quick spring of weeds is the token of the heart and life of the land, and weeds should be allowed to proceed to the point of advantageous plowing or digging under. In this brief resting time of a piece of land, perhaps while too wet to dig well, a weed cover is valuable; it will help dispose of surplus water by the persistent pumping of the deep roots, and you can often tell when the ground is fit to dig more easily by pulling up a deep-rooting mallow than by a thrust of the spade. Up will come the mallow, dragging from below the particles of loam which its rootlets have laid hold upon, and you may often see that it has drained the lower layers by its root-pumping so that it has less moisture in the soil at its feet than around its collar. Do not let the mallow get too high before making this test, because of the ground is right you need to dig this mallow and all its neighbors deeply into the soil. Do not let the mallow get too high, for then it may have taken too much moisture from below and your burial of large weeds may be a little dangerous unless you have plenty more rain or irrigation. One has to study the growth of weeds: What it means: what it does to the soil. To the man with understanding, the growth of weeds is a blessing: to the one who has no understanding

of weeds all that was said to Adam about them in the beginning is still true. And so our exhortation is to those who are now being lost in the weeds: do not let them grow too high: do not wait until you have to cut and drag them off: dig them in soon, even on land which you do not expect to plant until after frost. It is wonderful how they will enliven and enrich your soil. If you have walks in your garden, clean them and dig the weeds into the beds or borders. Do not carry all the weeds into the kitchen: give the soil its share of the salad which nature grows while you are keeping out of the wet.

Home Honors to a Prophet.

Talking so much about plants reminds us of a plant prophet. We are weary of weather prophets, for they either slam each other as

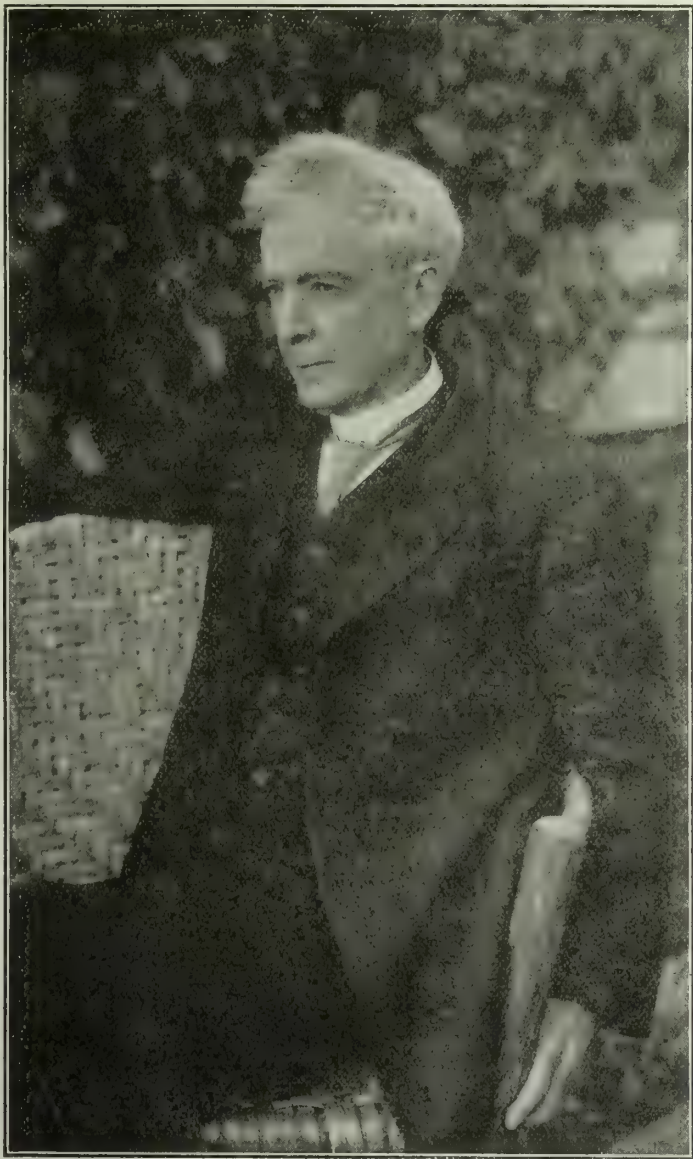
thereto we recall an incident, even at the risk of being thrust into the prophet-class ourselves. We remember attending a public meeting in Santa Rosa about twenty years ago—the meeting called for the purpose of deciding what Santa Rosa could do to attract the attention of the thousands who were expected to visit California during the Mid-Winter fair. Then it was that to many Santa Rosa persons, Luther Burbank was “a crazy chump who grew hundreds of thousands of plants one year to burn them all up the next year.” Such persons were doubtless considerably startled when we suggested that the best thing they could do to make Santa Rosa famous was to erect a street-spanning arch near the railway station and inscribe upon it: “Santa Rosa: the Home of Luther Burbank.” We do not remember whether they took the advice or

cretely in the felicitations which Santa Rosa people are bestowing this week upon their distinguished fellow citizen, we present his latest portrait herewith.

That Cheaper Money Is Coming.

Since our Glenn county reader held us up last week and called upon us to produce that money for more alfalfa and buildings on his ranch, something has happened in the line we prophesied—which may give us a leg, perhaps, as a financial prophet. President Wilson has come through with his commendation to Congress that there be established in the Treasury Department a bureau of farm land banks under the direction of a commissioner and there be made provision for the formation of such banks in any state under federal charter and federal inspection. Any group of farmers within a State might organize co-operative farm land banks with power to issue bonds to raise funds from distant money markets for farm developments. Operations of the individual banks would be confined within state lines, the supervision will be federal. They may do only agricultural business. Loans to farmers may not exceed fifty per cent of the value of improved land, nor extend more than thirty-five years. No institution can begin business without a foundation capital and double liability provided for national banks. The amount of long term business which might be undertaken by any of the proposed banks could not exceed fifteen times the amount of protected paid-up share capital and surplus. They might accept and pay interest on deposits not exceeding fifty per cent of capital and surplus and receive deposits of postal saving funds to the same extent.

This rough outline is all that the telegraph brings thus far. It has to do with long-term mortgage credit; short term loans are to be provided by another bill later. When President Wilson’s promised message on the subject appears, we shall have opportunity for as full discussion as our readers may desire.



LUTHER BURBANK OF SANTA ROSA.

Queries and Replies.

Querists must submit full names and addresses.

Hog Millet.

To the Editor: What is the correct name for “hog millet”? I have heard that it is a quick grower and a heavy yielder. What is the best time of year to sow it, and how much seed to the acre? What is its value as a hog-feed as compared with barley? What do you consider to be the best grain to plant on rather heavy unirrigated red mesa land for hog feed?—M. C. A., El Cajon.

“Hog millet” is *Panicum miliaceum*, sometimes called “broom-corn millet” because of its branching head. It is, of course, not broom-corn, which is a sorghum. Hog millet is not so tall-growing or so leafy as some other millets, but it makes more seed—which is larger. It is used in Dakota in place of Indian corn because it matures in a shorter season and endures heat and drouth well. It is poor as compared with barley. It must be sown after frost danger is over, at about 25 pounds to the acre. What it will do with you must be told by trying. If you can grow rye or barley during the rainy season and sorghum grain (Kaffir, milo, etc.) after frost, you have nothing to gain from millets—hog or otherwise.

false or else they charge each other with stealing their thunder, which may do with weather perhaps. We see that Prophet Hicks of Missouri claims that he put forth the sun-spot, planetary-conjunction line of prophecy before Prophet Ricard was born—a plague on both their prophetical shacks, say we. But with plant-prophets it is apparently not so. Plant prophets, may, it seems, reverse even the scriptural dictum about long-distance honors for prophets, for as we write, an event is transpiring at Santa Rosa which indicates that Luther Burbank has his fill of honors in his own country and in his own house—because his nearest neighbors are giving him a banquet this week under the auspices of the Santa Rosa Chamber of Commerce. As pertinent

not: that is immaterial, in view of the fact that they all, long since, realized that the point was well taken, and that Santa Rosa is now known around the world as the home of Luther Burbank and for no other reason comparable therewith. It is also a fact, beyond all question whatever, that of all the men California has grown or trained none has a name which compares with that of Burbank in world-spanning; it is a proper noun become a noun common, an adjective, a verb transitive and intransitive. It has not the altitude of the names of some of our great national patriots who lived for all men and for all time, but at the present moment it has even greater spread than they in the current thought of the world. That many of our readers may join more con-

Research Work With Strawberries.

[Written for the PACIFIC RURAL PRESS
by ALBERT F. ETTER.]

When a person undertakes research work he naturally goes deeper into the subject than the person who follows on every-day lines, but even though he opens up many new and original facts, so familiar does he become with it all in his every-day work that he is unconscious of his position. He does not fully realize the difference between his knowledge of a subject he has specialized in and the more superficial knowledge of the every-day world. Modesty naturally holds a man back more or less, anyhow, and we all know that empty barrels are generally the most inclined to make the most noise. The above is just a preamble to a few words I feel called upon to say about Ettersburg strawberries.

From the letters I get on the subject, I am forced to the conclusion that there are a great many things I have absorbed in my study and experiments in strawberries that, though all A B C to me are "Greek" to most people; so I will try to give a few facts, in a form that the reader without much effort may absorb, and maybe it will be better for all of us, including the strawberries.

In speaking of my strawberries as a new race, people do not readily grasp my meaning. We speak of the Mongolians as a race of men, and we recognize various types, divisions, or branches of the Mongolian race; then we have brown, black, red, and white races in thousands of tribes.

Now suppose we had an eugenic experiment where selections of many and varied types of all these five races of people were put into a community, intermarrying of contrasts was the rule throughout several generations; it is easy for anyone to imagine that when they had reached about the seventh generation, if the progeny was numerous enough, one could find pretty near what he was looking for, if he wasn't too particular. We would have a Mongrel race of men that would vary so much that family resemblance would hardly be the rule. This is analogous to what I have undertaken with strawberries. From what I can observe in plant analogous, the French have used both the Chilean and Alpine species in the development of their varieties. There may be traces of Chilean and Alpine blood in the American varieties, but I should suppose that the stock came pretty near being American bred. It is bred up largely from the types of native strawberries indigenous to the Eastern States. One of the most prepotent characteristics of the Chilean species of strawberries, whether from Patagonia or Cape Mendocino, is evergreen foliage. The ordinary varieties, almost without exception, are brown and dormant in winter here, and I have perhaps one hundred kinds. This dormancy in winter is possibly the best character for a climate where everything is "brown and sear" as it is in the East.

However, that sort of a nature does not dovetail with California climate to the best advantage. In my work I have used our native evergreen beach strawberry, and also our wood strawberry, hybridizing with many of the Eastern varieties, and the Alpine species from Europe. We get about all that is desirable in the regular

varieties, plus the desirable characters that make our native species typical Californians.

If you desire to know what those characters are, then plant some of our cultivated berries of Eastern stock on the dunes, or among the little Californicas beneath the oaks, or in among the bushes. They can't exist: that is all there is to it.

Now what Etter has done for the strawberry is that he has made a new race of strawberries for California, that while they are not quite as hardy in roughing it as the real natives are, they are nevertheless able to grow very well on the hillside here under natural conditions, and produce a good many berries, too, just as the ordinary type of varieties luxuriate in favored places in the East. As for the regular varieties, this is where the hybrids do so well on my grounds, we can scarcely grow the regular varieties under good cultivation. We have the ever-green type of foliage, so prominent that as one looks over the plot with one hundred regulars on one side, and as many hybrids on the other, it reminds one of midwinter in the East on one side, and California on the other, all done in strawberries. We too have other desirable characteristics not found in regular varieties, such as the deep roots and leathery, heat-resisting foliage of the beach species. Best of all, however, is that we have so many and such varied flavors among these new hybrids: flavors that we never had in strawberries before. A whole family of berries that are distinctively new, and Californian by nature. It means that thousands of people can grow these berries with ease (just as we are doing here at Ettersburg now) who find it impossible to grow the ordinary varieties successfully.

This implies that with Ettersburg strawberries in all their numerous varieties, we will be able to grow strawberries on a lot of land that will not grow strawberries now, and greatly extending the industry. However, it does not mean that we are going to overdo and glut the market. Out of the Chilean species we now have a type of berry the canner has long looked for: a berry that will hold up in processing. With such a berry, one that you simply can't boil to pieces, and of deep red color, the canners will take all we can produce, especially when we have a wide variation in flavor. But the public is not easily fooled. So when they look upon a dish of strawberries that are supposed to be canned, but are still as whole as cherries, there evidently is something wrong somewhere, because strawberries won't cook like that. Then when the juice of wine-like clearness is found to be actually colored, what are you going to do about it? So herein is another problem, to overcome the wisdom of the people, where it is not wisdom at all. It is a ticklish proposition to tell a person that you are giving him pure unvarnished facts without making him flare up. But I am going to say this much now, and leave the strawberry of the future to prove it. We will have innumerable varieties, and they will have many unique flavors that we do not now have. Some of these will have little color, and others will have a color so strong that it would not be at all strange if one were accused of using

artificial coloring. We will be growing great crops of strawberries on land that today is not considered strawberry land at all. All this is going to come out of the varieties we now

have, and added thereto the wild species of the world, so eventually what we now call a long list of varieties will look like a mere beginning. Briceland.

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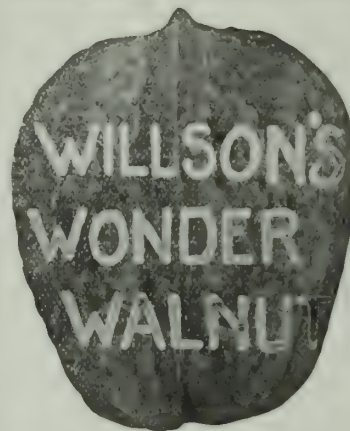
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THOS. S. DUANE, Prop.

Martinez, Cal.

Profit in Good Pruning.

[Written for the PACIFIC RURAL PRESS.]

The discussion in these columns last summer on the more thorough pruning of the prune tree (and some other trees) was one of the most important matters on fruit-growing taken up for some time. Any application of pruning ideas or decisions gained by the discussion must be made this winter, which is a fine time to put ideas to test.

Almond trees probably get off with less interference from the pruning shears than any other of our stone fruits, with the possible exception of cherry trees, and Frank Swett, Horticultural Commissioner of Contra Costa county, and one of the largest fruit men there, reports some very interesting developments in almond growing and pruning in the eastern part of his county.

Years ago quite a bit of almond planting was done in certain parts of that district, under the belief that the soil and climate was admirably adapted to that fruit. Results justified the opinion and the trees produced fine crops during the years that they were young and vigorous and sending out lots of new wood. In a few years, however, they started to fall off in production and only produced good crops once in a while.

As has happened with nearly everything, the less profit made the less money is expended on producing it. It did not pay, it was thought, to prune at all, fertilization was utterly undreamed of, and even plowing was reduced to a minimum, and on most orchards only disking to make a small soil mulch was practiced. By this means the cost of caring for an almond orchard for a year was reduced to approximately \$5 per year, a wonderful but hardly profitable achievement.

A DISCOVERY.—The almonds were nearly all of the Hatch varieties, that is, Nonpareil, I. X. L., and Ne Plus Ultra, which have reputations for rather shy bearing in lots of places, and when the word went out that these varieties could be made to bear by grafting in the Texas Prolific or Drakes Seedling to cross pollenize the blossoms, a number of the almond growers decided to reform their orchards in this manner. The experiment was a success, or at least the vigorous growing Texas Prolific branches produced nicely and the rest of the trees bore well, too, with the incentive to growth made by cutting off several big branches.

An interesting variation in result occurred where the grafts did not take. The shoots from the stub, were of course of the Hatch varieties, but they bore finely, in a way that left all the old wood out of the running. Apparently the advantages were not with the grafting in of new varieties, but the sending out of new wood.

Closely related results were seen with old orchards that changed hands. The buyer with pleasure in new ownership would go over the neglected trees and cut out a lot of the brush and fix them up generally. They would respond to the treatment with vigorous wood growth and the new wood in proper time bear good crops.

It is, of course, a known fact that most fruits are borne on new wood, and the only way to get new wood that will produce sufficient fruit in most instances is to cut back old

wood. The vigorous growth that follows cutting back is known to everybody, and the more cutting back, the greater the growth, for which witness the brush that comes when a big branch of most anything is cut off to a stub. The almond is about the most unpruned tree there is, also one of the most irregular bearers. While it is true that irregular bearing is largely due to susceptibility to frost, it is equally true that strong buds are quite frost resistant, and proper pruning and care makes strong buds.

ALTERNATE BEARING.—The cause of alternate bearing with most everything is something like this: The tree cannot make both a heavy fruit crop and lots of wood. Pruning and care is such in most instances that the tree can do little more than make the fruit and there is not enough new wood and reserve vigor to set a good crop the next spring. Even if the blossoms form, they are not hardy, and fall with little bad weather. During the summer, however, the tree has little crop to worry about and so can give all its attention to wood. The result is that, whether pruning is done or not, there is usually quite a little new wood, and if everything is favorable a good crop may develop.

By this method, or lack of method, there is no regulation of the amount of fruit to be set, and no reliance on good crops in alternate years. The trees may put out so many blossoms that none will be strong enough to resist rains or frost, or if much fruit does set, a lot will have to go off in June drop or what not, or if all stays, it will be undersized and of poor quality.

Theoretically, alternate bearing in nearly all cases could be overcome, weather permitting, by regulation of strength by pruning, irrigation, fertilization, and care generally, and in many cases it is. Actually it cannot be entirely overcome, but in practically all varieties, citrus, deciduous and otherwise, at least some effect in overcoming alternate bearing habits can be made by such regulation.

PRUNE PRUNING.—Under normal conditions the prune is quite a regular bearer, though nearly all fruits have a certain tendency to slacken up slightly after a heavy crop, and the prune is no exception, but under the policy of "non-intervention," or let-alone methods, the prune has the alternate habit, the slackness going over more than a single year to boot. In certain sections particularly, bumper crops make prosperity for a time reign supreme, but the lean years eat up the profits of the fat one as did the seven lean years in Egypt centuries ago. In certain districts this fact is very marked, in others, where prune growing is not extensive enough to make non-pruning prune methods the rule, pruning something like peach or apricot pruning is common and regular bearing common.

The thrips has been to blame in good part for a lot of the non-pruning of the prune. The thrips took very many buds, and the plan became to let the tree grow so that buds would be so numerous that the thrips would have to leave a few and those few would possibly make a crop. The trees, therefore, developed a lot of brush and an immense amount of blossoms nearly every spring. In the process the evils of non-pruning de-

veloped as they would if the lack of pruning had been done by neglect rather than design.

Such a system of caring for prune trees developed on Mr. Swett's ranch in the Alhambra valley near Martinez. Since a method of control that was absolutely effective against the thrips has been found, all excuse for letting the prune trees go to brush has gone, and on this place the prune trees are being worked back to their former shape and former schedule of handling. Every year the trees are pruned more than a little to let light and air in and to keep new wood coming on.

It is an excuse in some places that the trees are not vigorous enough to permit shortening of branches, that the rainfall is not sufficient to make the same kind of pruning possible that would be practiced under the best of conditions. That is why it was intimated at the first that this year with its fine large rainfall would

be a fine time to give the trees a good start. Lots of cutting back will make lots of growth, and there is enough moisture in the soil to carry that growth through in fine shape.

If there is one class of wood for which little excuse can be made, it is water sprouts. On almond trees through the State, and on lots of prune trees in some districts, you will see old water sprouts from the thickness of a broomstick to the thickness of one's wrist. With some trees there is the excuse made that they were needed to renew the tree. With almonds seldom even this excuse can be made.

In almost any instance, prune or almond growers who have reason for dissatisfaction could well experiment in a little more vigorous pruning and shortening back; if they have lots of water sprouts in their orchard and not even an excuse for them, they are hopeless if they do not even cut them out.

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Ask for 1914 Catalogue.

New Plums on Peach Trees.

[Written for the PACIFIC RURAL PRESS
by R. E. HODGES.]

Grafting old peach trees to plums, and inferior varieties of peaches and plums to later and better varieties, are necessary in the foothill fruit district of Placer county to keep up with changed market conditions and the introduction of better new fruits. H. J. Morgan is one of many who are grafting new varieties, on trees five to twenty years old. On the forty acres cleared of wood and brush by himself and his son, since thirteen years ago, are bearing trees of many varieties of peaches, plums, cherries, and pears, with a few oranges, loquats, grapes, etc., for home use and small orders. All fruit in this district except cling peaches, is raised for shipment fresh to eastern markets.

Six or eight years ago the Morgans became enthusiastic over the Hungarian prune, as a shipping plum, and a large block of trees was planted. The Hungarians proved to bear only on alternate years. During the past January, these were grafted over to Vacaville and Formosa plums.

The latter is a Japanese plum, originated by Luther Burbank and introduced to this section recently by the Silva-Bergtholdt Co. Very few of this variety have yet been shipped from Placer county but the plantings already made will within a few years make the shipments run into the neighborhood of 75,000 crates, annually.

Mr. Morgan grafted a few trees two years ago, which furnished several crates for shipment last season.

"It's the early plums that make the money," observes Mr. Morgan, "and the Formosa comes even earlier than the Climax, which has been, with the Burbank, a favorite money-maker for many years.

"The Climax has been improved upon. It has a pointed end which makes it hard to pack. The point ripens sooner than the rest; and in shipment, this ripened point often gets bruised and spoils, giving the Climax a black eye on the market.

"The Formosa is several days earlier, it has a round end, its color is prettier, and it has that absolute necessity, for all fruit for this section, ability to ride eight or ten days in a refrigerator car and then tempt the appetites of eastern consumers."

This is the reason that not only the Hungarians are being displaced by Formosas, but Sherman cling peaches and Early Crawford submit to the saw and grafting knife in its favor.

A block of Early Crawford, bearing small unmarketable fruit, stands next to another block on higher ground where the fruit is prime. In this red granite soil, most of which is poorly drained, the wetness seems to spoil the crop. Perhaps Formosas will do better.

Anyway, California peaches, at certain seasons, have a hard time competing with those raised in Texas, and other eastern states. Sometimes they do not sell for enough to pay the freight, which is \$299 per car.

Some of the Crawford are being changed to Levys, of which Mr. Morgan has several hundred trees. These come late enough to be demanded by the canners, whose agents contract the crop before ripening time. One cannery so far away as San Jose, intends

to use none but foothill peaches hereafter. Benicia and Sacramento take a large share of the Placer cling peaches.

Last season, the canners' agents did not appear as usual, and the crop of Levy's was in danger of total loss. The first part was saved by the Penryn Fruit Company, who shipped them east to a fortunate market. Meantime the Sacramento valley peaches had been used and the canneries reserved the rest of the Placer crop.

Some Sherman cling peaches were grafted in January, 1914, to Formosa plums, because the Shermans ripen after the canneries close. They were sold to peddlers last year at a good profit, but Formosas are deemed a surer paying crop.

All fruits appear to be preparing for a bumper crop this year, and all growers hope the cold weather will continue until March.

The Morgans' forty acres are equally divided between father and son, but the whole place is rented to a Japanese. The net cash profit to

the father last year, after paying all commissions, shook, and other expenses were \$1400 from the twenty acres.

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San Francisco

Garden Sub-Irrigation With Tile.

We have frequently, during years past, remarked that sub-irrigation of a garden patch with tile, to be occasionally taken up, cleaned and relaid is a perfectly practicable way to get maximum results from a small irrigation supply, if one is willing to take the trouble to keep the "system" in good working order. It is quite feasible to turn waste water from the house into kitchen vegetable supplies in this way. L. H. Cobb gives the Texas Farm and Ranch an exhortation along this line which may be suggestive to some of our readers:

Growing a goodly supply of vegetables over a single line of pipe, as I shall describe, is not wholly an experiment, for I grew a fine lot of beans and cucumbers over one in a dry summer that destroyed all the other vegetation in the garden. This line was laid to test the virtue of sub-irrigation on our grounds. The row was 150 feet long, and the soil was kept in a good growing condition from six to ten feet wide with but a portion of the amount of water it would have required by surface irrigation, and the results were much more satisfactory than would have been possible by the latter method. Where the surface soil is thoroughly stirred with sub-irrigation, no trouble is experienced with weeds, for the seeds will not start in the dry top soil, and the moist soil underneath keeps the plants growing to perfection, and an abundance of air gets to the roots from above.

LAYING OUT THE SYSTEM.—The first thing you must take into consideration in selecting the ground for your

garden patch is to get it level at least one way, for the pipe or tile must be laid nearly level or one end will get more water than the other. Our first line of tile was ten inches lower at one end than the other, and the water fairly oozed from the ground at that end before the surface soil was even moist at the other. A much wider strip was irrigated at this lower end, but much of it was too wet to cultivate at any time, and turned green, though the growth on it was something remarkable. The tile should slope about two inches to the 100 feet, as that will give a steady but gentle flow, so that a small amount of water will reach the full length, making a more even distribution than if it were more nearly level. The higher part would receive enough extra water from being near the source to counterbalance the extra supply held in the lower end when an excess of water is provided.

In preparing your plat make it long and narrow, for you had better not try to operate more than one tile unless you have a water supply other than the kitchen sink, for the first tile entered would be apt to get the lion's share of the water. If you have it so you can give a thorough irrigating when you start in you can have as many tile rows as you wish, for you can keep the flow going until they are all full, and hold the water in them until the soil is moist to within five or six inches of the surface. Do not try too much at once, for it costs money to lay tile, and there are some soils you cannot sub-irrigate with very good success, though they are not common. A heavy, almost impervious subsoil not over two feet from the surface makes it easy, while a loose, gravelly subsoil makes it almost impossible.

Lay your line of tile about a foot under the surface. Two or three inches of strawy manure on top of them will be a good idea, but pack dirt firmly underneath and up the sides for about half way, so the water cannot spread out much until it has run the length of the tile and raised up some on it. Of course it will soak out some between the joints and that is right, else the lower end would get the best of it.

THE OPERATION OF IT.—In planting the garden I would plant the greatest water lovers directly over the tile and those plants that will do well with less water at the edges. I like to have the rows all running lengthwise, for it is so easy to cultivate them that way. A few hills of cucumbers directly over the tile at one end will supply more fruits than a good-sized patch without irrigation. Beans will yield tender pods for an extended period, lettuce will keep sweet and tender twice as long as usual, and the radishes will be all you could ask.

In connecting the pipe from the sink with the tile I would set a galvanized tub or bucket where the discharge pipe ended, and run a half or three-quarter inch pipe from this to the openings in the tile. Of course, this tub or bucket must be at least as high as the highest end of the tile, so the water will run through it freely. It is well to put a screen wire over the entrance to the pipe or over the tub so no trash can enter the supply pipe to obstruct it.



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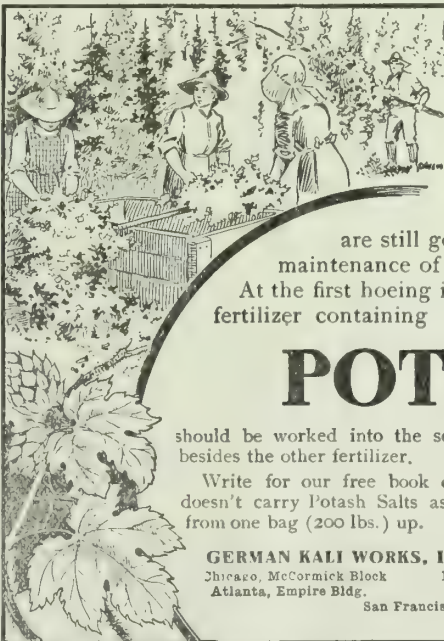
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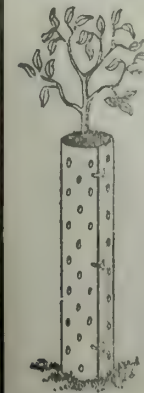
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The Kitchen Garden for the Farm.

[Written for the PACIFIC RURAL PRESS.]

(Concluded from last issue.)

LETTUCE.—Lettuce can be grown easily in any garden, and there is no one who does not like to have a nice fresh lettuce. There are four types of lettuce, the thick-leaved Butterhead cabbage type, the thin tight-heading crisp type, the non-heading, and the Cos type.

The best Butterheads are Big Boston and California Cream Butter. The best crisp heading varieties are Hanson and Los Angeles or New York. The crisp heading is the most popular class, and Los Angeles is a variety that meets all demands for quality. Of the non-heading varieties, the Morse and Grand Rapids are among the best. White Paris Cos is the finest Cos variety.

Lettuce in many parts of California can be sown all the year round. Sow in rows 15 inches apart, $\frac{1}{4}$ inch deep, and thin out plants 8 inches apart when large enough to handle. One-half ounce will sow 100 feet. It is often more convenient to sow lettuce broadcast in a little patch and transplant, when large enough, to odd corners in the garden for filling up the row as the matured ones are taken out. Lettuce transplants very easily so long as attention is given to watering. To get a perfect Cos lettuce it is necessary to loosely tie a piece of raffia around the head to promote tight heading.

MELONS.—Muskmelons freshly gathered are always a treat, and they can be grown without trouble in most California gardens. Rocky Ford is the one muskmelon to grow in a garden unless a salmon-fleshed melon is wanted, when Fordhook will prove the best. The seed should be planted after danger of frost has gone. Sow in hills 6 feet apart each way. Sow 6 or 8 seeds to each hill, and thin out to 4 strong plants. One ounce of seed will plant 100 hills. It is beneficial to give good waterings to the plants during fruiting season.

Watermelons with many are even more popular than muskmelons, and where it is possible they should be included in the kitchen garden. Tom Watson is the very best variety for all purposes. Angeline and Kleckley Sweets are also favorites. Sow the seed about the middle of May in hills at least 8 feet apart. Plant 6 seeds to each hill, and thin out to two strong plants as soon as third leaf shows.

ONIONS.—Onions are a necessity to every housewife, and they are easily grown in any garden. For summer and fall use, Prizetaker is one of the best. Ohio Yellow Globe is also good. For winter, Brown Globe and Australian Brown are best, because of their excellent keeping qualities. Those preferring a mild white onion will find White Portugal best, but white onions will not keep when stored. As a red onion, Red Wethersfield is best.

Onion seed can be sown in most places during the early spring months beginning in February. The rows should be 12 to 14 inches apart and the seed sown $\frac{1}{2}$ inch deep. One-half ounce will sow a row of 100 feet. As soon as the plants are large enough to handle, they should be thinned out to 4 inches apart, unless it is intended to use the thinnings later on as green onions.

PEAS.—Peas are the favorite vege-

table of many people, and, like so many other vegetables, they are 50 per cent better when gathered fresh. For early crops, Laxtonion, British Wonder, and American Wonder are excellent. All are dwarf varieties requiring no support. The first and second varieties have lately been introduced on the Pacific Coast and are proving great favorites. For second early use, Stratagem and Telephone are very fine. While Stratagem does not really require support, it does better when supported. Telephone should be supported. For a main crop peas, Alderman is very fine. It is best supported. Senator and Champion of England are good varieties.

By judicious sowing, a long succession of peas can be had. Planting can be commenced in January if it has not been done before, and sowings made at intervals of two or three weeks. Sow 1 pound to 50 feet and plant 2 inches deep. The rows should be 18 inches apart for dwarf varieties and 3 feet apart for tall varieties. It always pays to support the tall varieties. If suitable stakes made from tree boughs cannot be had, a very coarse-meshed chicken wire does admirably. When supported, the peas do much better, no damage is done when picking, and it is much easier to gather the pods.

PUMPKINS.—A place can always be found in some odd corner of the garden for a hill or two of pumpkins. For home use, Small Sugar is one of the best. A large variety of good quality is Connecticut Field. Plant the seed in hills at least 8 feet apart toward the end of April. Plant 1 inch deep and 6 or 8 seeds to each hill. Thin out to four strong plants when third leaf has developed. One-half pound will sow 100 hills.

Squash is treated in like manner to pumpkins. For summer use, Early White Bush Scallop is the best. Yellow Summer Crookneck is another fine variety. For winter use, Hubbard is the best variety, and Boston Marrow next.

RADISH.—Radish everyone can grow with no trouble. For long varieties, Brightest Long Scarlet, Chartier Red, and Icicle-White are good. Good varieties of the half long kind are French Breakfast, red-tipped white, Celestial, White, and Half Long Scarlet. The best small round sorts are Early Round Dark-red, Scarlet Turnip White Tipped, and Early White Turnip.

TOMATOES.—Tomatoes are another example of vegetable much better when gathered fresh. Good varieties are Bonny Best, Dwarf Giant, and Matchless. If it is not possible to raise the plants in a hotbed, plants can generally be had from the seed stores by mail. The plants should be set out 6 feet apart and in the garden if a good stout stake can be put in alongside the plant and the plant given a few ties as it grows the results will be much more satisfactory. Frequent watering during the fruiting season will be very beneficial.

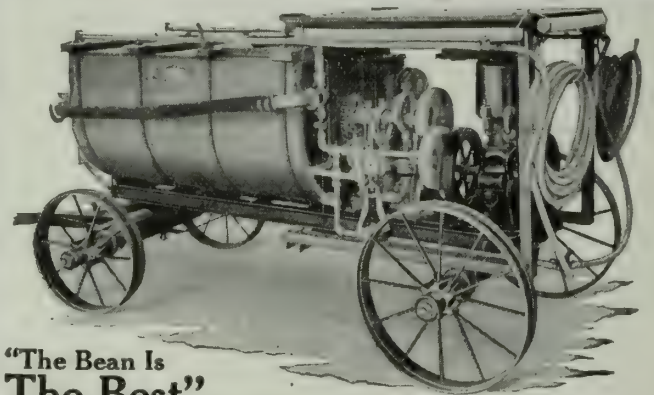
TURNIPS.—Turnips, though not easy to grow well in many places, can be grown during certain seasons of the year with success. The best varieties are Early White Flat Dutch, Purple Top Flat Dutch, and Orange Jelly. Sow the seed in rows 10 inches apart. Plant $\frac{1}{2}$ ounce to each 100 feet, and thin out the plants 4 inches apart. Turnips are best treated as a winter

vegetable. Sowings should be made at intervals commencing in August.

Go To It.—There are many other vegetables which can be successfully grown in a kitchen garden, but those

mentioned are the most popular. Nearly all seedsmen give a few cultural directions in their catalogue and many useful hints can be had from keeping a copy in the home for reference.

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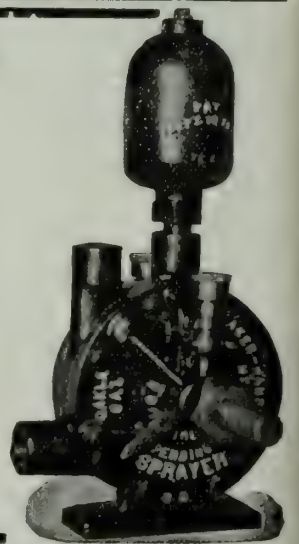
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Interesting Study of Sorghums.

[There is no doubt of the fact that although California has grown sorghums for forage and grain for nearly forty years, to this writers personal knowledge, it is rather likely that this group of plants is only now entering upon its period of full appreciation and usefulness. Other states which have fewer plants under observation are making a careful study of the sorghums which California investigators should not have so long neglected. Their results may not always apply to our conditions and yet there will be many good suggestions in them.—EDITOR.]

AN OKLAHOMA SORGHUM STUDY.—Prof. O. O. Churchill agronomist of the Oklahoma College of Agriculture, has recently published a sketch of sorghum varieties from which we shall draw suggestive paragraphs:

There are three main groups of grain sorghums: Kafir, durra, koalangs and miscellaneous. Of the Kafirs there are black hulled, red, pink and white. The black hulled is the most important Kafir and is undoubtedly the best grain sorghum for the portion of this section where the rainfall is the most abundant. Approximately this would be east of the 99th meridian or a line running north and south about 100 miles east of the western boundary of Oklahoma. The red Kafir is earlier, but is less productive and its culture should be limited quite largely to the northern sections and to places having a higher altitude, hence a shorter season. The pink and white varieties are not commonly grown.

SORGHUM IN GROUPS.—The durra group is a very important one. It consists of white milo, yellow milo, feterita, Jerusalem corn and brown durra. The varieties of importance in this group are the white and yellow milo and feterita. The dwarf yellow milo is more commonly grown than the other varieties of this group, but the growth of feterita will be greatly extended during the next one or two years.

Another group consists of the koalangs and miscellaneous grain sorghums. The brown and white koalangs are grown to some extent in the western portion of Oklahoma. They are, however, of little importance at this time.

Shallu is grown under a great many different names, such as desert wheat corn, California wheat and Mexican wheat. Statements concerning this variety are usually very misleading. It is not an important variety, and probably never will be, for it has several very objectionable characteristics. Among these are: excessive stooling, its weak, easily lodged stalk, and its bad shattering.

Sudan grass is a recent importation made by the department of agriculture. This variety will be grown for hay rather than for grain production. In appearance it resembles very closely Johnson grass, but it does not have underground root stalks and hence there is no danger of its becoming a pest. It gives great promise of being a successful hay crop. Sudan grass is an annual. In some seasons it will produce as many as three or four crops under favorable conditions. Two crops in one season is all that can be expected in the territory included in this discussion.

During the past year feterita gave

unusually good yields. In many cases it out-yielded Kafir and milo and in some cases it gave fair yields of grain when Kafir and milo were failures. It matures from one to two weeks earlier than Kafir and a few days earlier than well-bred milo and is probably a little better drouth dodger.

MILO AND FETERITA.—For forage production feterita is better than milo, but is somewhat inferior to Kafir. At the present time this crop offers opportunity for improvement. It stools too much, it does not stand up well after maturity, and it is reported that in some cases it shatters to some extent, although feterita is not generally bad in this respect.

Milo and feterita may be considered competitors. At the present time they are the best grain sorghums for the dryer sections. No doubt it is their earliness that makes them so valuable for this area. The territory where they should be grown is somewhat distinct from that for Kafir.

EVIL OF MIXED SEEDS.—Nearly all the grain sorghums grown at this time are very badly mixed. One ought not to expect a good yield when inferior, mixed seed is planted. There is no one phase in the culture of these plants that can be so greatly improved as can the seed selection.

Grain growers who complain of low yields of Kafir and milo might better be making an endeavor to improve the quality and purity of the seed planted rather than to be constantly trying some new highly advertised, high-priced variety. The damage done by the constant introduction of new varieties and by the resulting mixtures has been so great that it will take years to overcome the attendant evils.

Much of the Kafir and milo now grown is even mixed with broom corn. High yielding strains of Kafir and milo always have compact seed heads. Certainly no crop mixed with broom corn will have this kind of a head.

SORGHUM AND CORN.—In feeding value the grain of the different grain sorghums will run about nine-tenths of that of corn. Ten bushels of Kafir, milo or feterita is equal to nine bushels of corn for fattening purposes. If the grain is ground there is probably very little if any difference in feeding value between the different varieties. There is, however, a difference in the hardness of the different seeds and hence there may be a slight difference in feeding value when the grain is fed without grinding.

It is just as easy to put stock in good condition for the market by feeding Kafir and milo as it is by feeding corn. Such feed, if fed exclusively and in large quantities, may produce harmful effects on the animal's digestive system. It is well, therefore, to feed a mixed ration.

FORAGE AND SILAGE.—The forage of these crops is valuable either when cured and fed as roughage or when made into silage. They should replace corn for silage as well as for grain production in the area under discussion. It is best to cut them after the grain is ripe when they are to be used for silage.

One very important reason why they make much better forage than corn is the fact that the stalks and leaves will remain green long after the heads have matured.

The sorghums will pay for good cul-

ture as well as will corn. When these crops are planted on the poorest soils on the farm and given indifferent culture it is no wonder that yields are low. The sorghums have certainly demonstrated their ability to produce good crops under the most unfavorable circumstances.

"A Stitch in Time Saves Nine"

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

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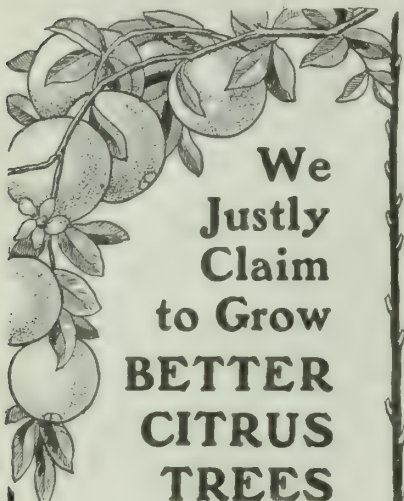
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Reflections on Vine Hoppers.

To the Editor: I have been watching in my vineyard at intervals this winter to note if vine hoppers kept up their activities there and find that even after a winter irrigation over a few rows of vines that habitations of them still remain in the dead leaves under the vines. I have raked out from the vines all rubbish and it don't seem to get rid of them. Last night a heavy rain puddled around most of the vines still leaves the tenants.

I have read in one of your issues the treatment of stable manure with lime to kill stable fly. What effect would it have to scatter the same underneath vines and then single plow next to them? Would lime do damage to vines?

Last summer the hoppers were troublesome in our house, being attracted by the electric lights at night. Following up the suggestion I placed a small torch light at top of a grape stake and noted some were caught in the open flame. Next season I will have a few large open flame torches made and will inform you if there is any remedy in it but I would sooner get the crop now if possible. Tell me something along this line.—SUBSCRIBER. Reedley.

[Vine hoppers get through the winter in the way you describe and they take freely to weeds, where there are any, and live and multiply on these. Raking and burning rubbish or clean-

ing with sheep are old remedies which have never fully arrived. Your cremation plans will probably be in the same class. Lime is added to stable manure, because it will kill many of the eggs and young maggots which grow in the manure. You may bury a lot of the hoppers in the way you describe but there will be plenty left. Lime will not injure the vines unless you use excessive quantities which you are hardly likely to do. Spraying early in the summer when the new brood comes from the eggs with tobacco wash forcefully against the under sides of the leaves is the most effective treatment. Fortunately the insect is somewhat irregular in its injuries. Sometimes a great show of hold-over insects early in the spring does not meet expectations of abundance of offspring, but it is necessary to fight nevertheless.—EDITOR.]

CLEARING UP-STANDING BRUSH.

To the Editor: I am alive to the fact that being a subscriber to the Pacific Rural Press, an admirer of its editor and the possessor of "California Vegetables", do not constitute a valid claim on your valuable time but I am encouraged by your many favors to the proletariat to hope that this appeal may meet with response.

I own 381 acres of rich land on Ben Lomand mountain, but am confronted with 100 or more acres of very thick, strong and vigorous white thorn trees or bushes. Can you tell me if any means has been discovered to destroy this, other than to grub it up?—G. W. A.

WHAT IS WHITE THORN?

Not being sure what is called "white thorn," we consulted Dr. W. L. Jepson of the University, our authority on California trees and he sends us the following interesting note:

"White thorn" is Ceanothus incanus unless your correspondent is misapplying the term, I do not think that he is, since the species grows in the Santa Cruz mountains. Ceanothus incanus stump-sprouts and also sprouts from the root. If it were grubbed out, stumps and main roots, cultivation ought to take care of the root-sprouting. It would interest me greatly, however, to learn of results of whatever treatment is applied, with satisfactory results."

SNAKING AND GRUBBING.

[Now that the ground is very wet we should proceed with a combination of snaking and grubbing, which is briefly described in "California Fruits" as follows: "In removing shrubs of a somewhat tall growth the top is made to help out the roots. Take two strong ropes or chains, each about 12 feet long, a good team and two men. Place a chain around the bush some distance above the ground to secure leverage. If a pull in one direction does not start the bush, give it a pull in another direction. While the driver and team is at this, the other man will be fixing the other chain around another bush. In this way the team is kept busy. Sometimes an axe stroke at a strong root will set the thing free. In this way a great amount of roots will be snaked out and grubbing reduced. Who knows a better way?—EDITOR.]

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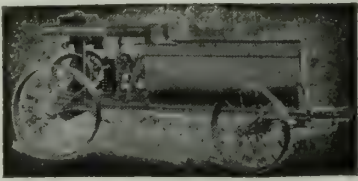
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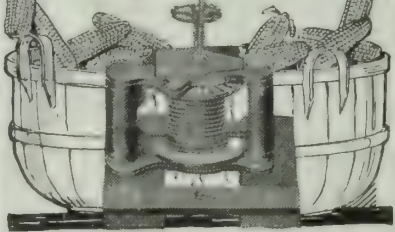


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Rabbit Fence in New Zealand.

To the Editor: No paper which I have come across contains so much interesting matter as the *Pacific Rural Press*. I find it of great assistance, and although conditions here are somewhat different to those pertaining to California, still the general information is such as to be quite applicable to this country.

I notice in your issue of November 1st the enquiry made for a rabbit-proof fence, and the footnote advising thereon by the editor. It is quite apparent that the rabbit nuisance is not such a big proposition with you as it is with us here, since the suggestion of the editor as how to deal with them would not apply in this country. If it is of any assistance to any of your readers I may say the following is the class of rabbit-proof fence which we find to be the best way of dealing with rabbits here:

Rabbit netting is used 36 inches wide, 17 gauge, 1½ inch mesh. A post every chain and six standards between each chain. A barb on the top of the standard and 4 plain wires. No. 8 Galvanized plain wire or Neptune wire is used, according as the cost works out to suit the fence required. A strainer post is erected at every bend, otherwise a strainer is used to every 10 to 15 chains on a straight line. The netting just reaches up to the second top plain wire, while a trench is dug along the bottom of the fence allowing the netting to be sunk in the ground; at least 4 to 6 inches is preferable. Where the rabbits are bad it is essential that the netting be sunk into the ground, otherwise the rabbits will only burrow underneath the netting. On hill slopes where the fence runs across the face of the hill, it is sometimes found advisable to use 42-inch netting, same gauge, same mesh. Even with a small mesh in the netting it will be found that very young rabbits will sometimes get through the netting, and after they get some feed in the inside of the fence they are unable to get back, however, a greyhound or a shotgun will easily keep down any intruders. This fence, however, will not keep in hares, as hares will jump any netting fence of less width than 42 inch, and even then they will run up the stays on the strainer posts.—FRED GEORGE, Dunedin.

[We are glad to have your good opinion and your contribution to

print. Our problem is probably easier because we have mostly hares to deal with and not burrowing rabbits. You seem to have both in quantities requiring fighting. In the fence in our issue of November 1, which you are reviewing, jumping is checked by putting the strand of barbed wire on the other side of the 4 inch post from that to which the netting is stapled—the latter being on the inside of the posts. This tempts to jumping onto the barbs and is discouraging. As to their jumping the other way (out of the field) that is not objected to.—EDITOR.]

THE KADOTA FIG.

To the Editor: A subscriber would like to know what you can tell him about the "Kadota" fig which is apparently a self-sealer. Does it require pollenizing? How does it compare with the White Adriatic and Calimyrna?—A. R. P., Dinuba.

ANSWER BY G. P. RIXFORD

The Kadota fig has been grown in an experimental way in different parts of the state for some years, but does not appeal to growers as worthy of extensive cultivation. In size it is small to medium, round or slightly pyriform with little or no neck; yellowish green in color like the White Adriatic; ribs not elevated though conspicuous from being darker green than the general surface; stem medium to long with three large bracts, where attached to the fig; pulp light to dark amber according to degree of ripeness, sweet, but without decided flavor; skin tough especially around the apex. It agrees quite closely with Eisen's description of Magdalen, a French variety imported by the late Felix Gillet, though it is said by Roeding to be a California seedling.

The Kadota does not require pollenizing, although most of the figs examined by the writer, grown in Stanislaus, Fresno and Imperial counties contained fertile seeds. It is inferior to the White Adriatic and does not compare favorably in any respect to the Smyrna (Lob Ingrir). As a dried fig its skin is tough and quality poor. I have not noticed that it is a self-sealer, though occasionally a specimen may be found, as in many fig varieties with a hardened drop of syrup or pellucid gum in the eye of the dried fruit.

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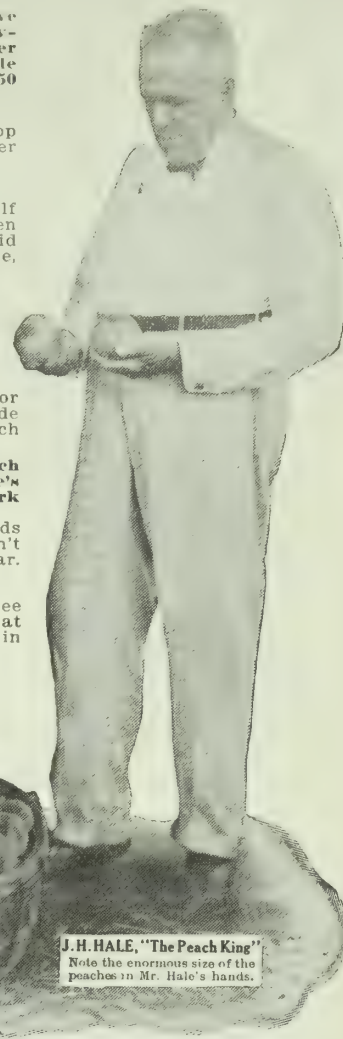
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Constructive Agriculture—No. 6.

The Shipment of Unripe Grapes.

[The standardization of fresh fruit shipments has been a wonderful help in certain counties of California, notably along the Sierra foothills, but the following deals only with one thing, table-grape shipments. E. M. Sheehan, secretary of the State Viticultural Commission, by request writes to the PACIFIC RURAL PRESS describing an evil in the table-grape industry of California, indicating the vast need of improvement. This is certainly constructive agriculture. Later on, before grape shipping starts, some suggestions as to remedies will be given; meanwhile, an appreciation of the great crime of shipping unripe grapes will arouse public sentiment. A few comments following the letter will develop the subject somewhat.—EDITOR.]

Almost the first work undertaken by the State Board of Viticultural Commissioners, appointed by Governor Hiram W. Johnson in September last, was that of starting an investigation regarding the effect of the early shipment of unripe table grapes from California into the Eastern markets. Letters were sent to over 200 of the leading distributors of California fruits in the United States and Canada asking them to state what their experience had been in handling green and immature grapes from this State, and what effect this practice had had on the market prices in the different localities, the object of the Commission being to get this information first handed; and if the Commission found that by these early shipments an injury was being done the table-grape industry of the State, it would then proceed by means of publicity and education in an endeavor to correct the evil.

Almost without dissent, replies were received from the inquiry sent out showing that this practice did exist, thereby working a hardship on both the producers and the shippers of table grapes which were not fit for consumption, as well as to the growers and shippers of grapes later in the season when the fruit is in prime condition.

Whatever might be said by me in a general way as secretary of the Commission would not be of as great interest to the readers of this statement as the verbatim letters of a few of the most prominent handlers in the East of California table grapes. As a matter of fact, table-grape vineyardists of the State would be entertained for a day or two by the reading of the many letters from every section of the United States by the State Viticultural Commission. Some are more interesting than others, and in order that your readers may have a fairly good idea of what these handlers of our table grapes think of us for shipping to the East these unripe grapes, I append to this article a few comments which tell the story in no uncertain way:

"As secretary of a national association of wholesale fruit dealers, it becomes my pleasant duty to visit the trade throughout the United States from time to time, and I think without doubt there is nothing that the California grape growers could do that is more injurious to this important California industry than to rush the season by sending out immature fruit.

"The consuming public is ready for

fruit when Tokays, Malagas and other grapes begin to move from California, and when they make their first purchase of grapes and find that they are bitter and of unpleasant flavor, they rarely ever make a second purchase for three or four weeks.

"In my opinion, the growers of table grapes from the State of California should be foresighted enough to protect their industry, and not forward grapes that are not matured; but, on the other hand, they should hold their products until they are in a proper condition for consumption, so that the public will consume a larger quantity of them. Very truly yours,

"W. D. TIDWELL,

"Sec'y, The Western Fruit Jobbers' Association of America."

"Replying to your favor of recent date dictated by Mr. E. M. Sheehan, would say that the shipping of immature grapes from the State of California certainly does do that industry a great deal of harm. The growers and shippers who ship the first few cars realize exceptionally high prices. It, therefore, benefits individual pocketbooks, but if the consuming public has purchased a crate, a basket, or even a pound of California table grapes they find them sour and unpleasant to the taste. They, as a rule, decline to purchase any more for some weeks. This is bad enough, but it is human nature to complain, and a man or a woman who has been stung by buying some immature grapes, in speaking to his or her friends will naturally 'knock' the California product. The usual remark is, 'Oh, yes, I bought some California grapes the other day and they were not fit to eat.' This remark, passing from the original buyer to different people, and from them on, is what does the damage.

"If the growers and shippers of these early cars would realize the fact that while they are benefiting their own individual pocketbooks temporarily, they are hurting the entire industry, we believe much good could be realized. If you have access to records of results realized not only in New York but the other large markets, and the smaller interior points, you will find that the first shipments have always brought big money, but there is an immediate curtailment of the demand, and it is usually from ten days to three weeks before the market gets into proper shape. The individual growers and shippers should also be advised of the fact that these early shipments of immature fruit not only hurt the State in general, but their own pocketbooks as well later on.

"When a consumer buys a basket or a crate he notices the name of the shipping concern as well as the name of the grower, and when going to his dealer to make future purchases, seeing the name of that concern or the name of the grower on the crate, the chances are that he will ask his dealer to give him some fruit out of another package as the last lot he purchased of that mark was very unsatisfactory. This, therefore, hurts the shipping concern as well as the grower, as the dealer will not buy that particular mark if he has many complaints of this nature.

"We believe your Board of Commissioners can be of great value to both the growers and shippers, and take

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These new hybrid plants are three to five times more vigorous than ordinary sorts and succeed where ordinary sorts fail. The greatest canning berries the world has ever produced and the table quality unsurpassed. Bred largely from our native species, making typical California plants to meet California conditions of soil and climate. Many plants ready December 1st.

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this opportunity of saying that you may call on us for any information we are in a position to supply you at any time. Yours very truly,

"THURSTON FRUIT CO., INC.,

"By C. E. Thurston, Pres.

"New York City."

In conclusion, I merely want to add that during the month of February, in Kansas City, when the Western Fruit Jobbers' Association holds its annual convention, the subject will be broached to them and they will be asked to take some positive action defining their position on the matter. It is more than likely that they will reiterate what has been said in the foregoing letters, because the membership of this fruit jobbers' association is composed in a large part by the very firms and gentlemen who have written directly to the California Viticultural Commission. It is the purpose of this Board to keep right at work along this line, and it is hoped that proper co-operation may come about through thorough education on the subject and that the practice will be done away with. Practically all of the fruit-shipping companies in California have agreed to help out in the cause, and there is reason to feel that an improvement in the condition will be noticed at the next season's harvest of table grapes.

COMMENTS BY THE EDITOR.

If anything, the situation has been described in too mild terms by the above. The first of everything is high in price, and the earliest grape-shipping section in California rushes to get grapes off as soon as possible. Then when another section starts, some growers or shippers want to hurry things again, and so green grapes lead the procession from practically every section of California, and it is the same with varieties as with sections, the result being that the reputation of California grapes is hard hit, prices are demoralized, and the market hurt so that very much fewer grapes are consumed. It is as true an illustration of the principle, "each man for himself and the devil take the hindmost," as can be found. California produces about all the table grapes she can sell now, and this method was largely responsible for the devil taking nearly all of the grape shipments in 1912. Only by stopping the practice can he be kept from doing so again. The Commission needs good backing to prevent this.

California grapes are especially susceptible to injury from poor shipments. There are no grapes of the same kind in the market, but there are Concord and other American varieties to meet, which have a quality very attractive to some persons and so much less freight to pay that sheer merit only can make California grapes beat them out. If no other grapes were in the field, buyers might throw sour California grapes away in disgust, but buy others later on because there were no other grapes to try and then find they were so nice that he would use a lot after all. If every California variety leads off sour, as it does now, it is a question of rejecting California varieties entirely and developing a taste for a different sort of fruit and be done with it. This is not a matter of theory, but an actual condition that has hit the industry hard enough to hurt.

Experience has shown in several instances in California horticulture that when a fine product only is sold and

sold properly, the amount used advances by leaps and bounds. Something has to be done to help the table grape business out too.

It is a question as to what should be done. Previously moral, not legal influence, was mostly favored. At the Fruit Growers' convention in San Jose for the first time the popular (though not quite unanimous) opinion was that this was ineffective and that laws were needed as a remedy.

One case was reported to us of a certain section where all shippers with one exception decided to hold off shipments until the grapes were fully ripe. The exception is stated to have made \$10,000 through having the early market to itself, doing as much injury from sour grapes as if all had been shipping green stuff. Naturally, it is "sour grapes" for the others, and everybody will probably be in at the start next summer. A failure like that ruins the chances for voluntary goodness.

Legal standardization is hard to define usually; with grapes a sugar requirement of say 18 per cent juice might do, and be rather simple, but it would be far inferior in results and application to voluntary standardization, where inspectors would decide on shipping fitness of the fruit. It seems to be one or the other. Legal prohibition can hardly be secured this summer, but it is up to the State to decide what it is going to do and then do it. Something has to be done, and if done it will be a glorious thing for our table-grape growers.

NATIONAL FOREST PRODUCTS.

With the election of officers and the adoption of a platform announcing policies to be advocated on the regulation of national, state, and private forests, the thirty-third annual meeting of the American Forestry Association closed last week at Washington. Dr. Henry Sturgis Drinker, of South Bethlehem, Pa., was re-elected president and San Francisco was chosen for the 1915 convention.

To emphasize the importance of the timber industry, statistics were produced showing that the forests supply more than \$1,250,000,000 worth of products annually and that the industry employed 735,000 people, pays \$367,000,000 yearly in wages, and utilizes 550,000,000 acres unsuited for agricultural utilization.

The association pledged support to the federal government in the administration and management of national forests and urged adequate appropriations for the care of the timber resources.

Federal co-operation with the States, especially in forest fire protection, was indorsed and the platform suggested that private owners should be aided and encouraged by investigations and educational work.

FUND FOR FIGHTING SQUIRRELS.

Secretary McAdoo has sent to Congress a large number of estimates for urgent deficiency appropriations. The estimates included an item of \$100,000 for the prevention of epidemics, to supplement a previous appropriation of \$200,000 which has been proved insufficient to complete the eradication of bubonic plague infection among ground squirrels in California and discovery of plague-infected rats in Seattle.

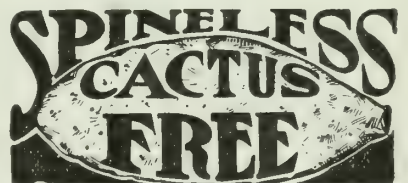
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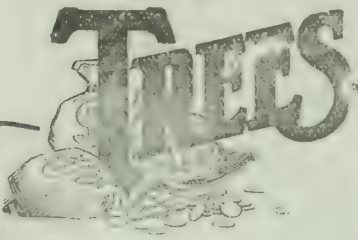
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Below we mention just a few of the varieties we can supply in almost any quantity. Remember, we grow over 2000 varieties of trees and plants, so the following are merely hints:

APRICOTS

Blenheim Royal Tilton
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FREESTONE PEACHES

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PEARS

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ALMONDS

Drake's Seedling IXL Nonpareil
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A Fruit for the Epicure. We offer
Stanwick, Humboldt and Advance,
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GRAPES

Table Wine Raisin

WALNUTS

We are the most extensive growers of grafted walnuts in California. We have a magnificent stock of Mayette, Franquette, Parisienne, Chaberte, etc.

It makes little difference what you may wish—we can supply you. All stock guaranteed TRUE TO NAME and will be shipped in first class condition.

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Superb specimens of the best varieties.

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The most rapid growing of all cedars. We have a fine assortment of sizes.

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All sizes in tubs and boxes and balled.

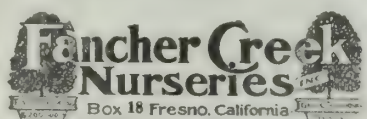
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Our stock of palms cannot be excelled. Ask us for special quotations. We have a fine stock of Chamerops Excelsa (windmill palm), Chamerops Humilis (Dwarf-growing fan palm), Cocos Australis (Pindo palm), Erythea Armata (blue palm), Washingtonia Filifera, and Washingtonia Robusta.

ROSES

We have the finest assortment of hardy, field grown roses we have ever offered.

Illustrated Catalogue—Free
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AGRICULTURAL REVIEW.

New Directors of State Agricultural Society.

Two appointments to the State Agricultural Society were made by the Governor recently. John M. Perry, of Stockton, was appointed to succeed himself and E. Franklin, of Colfax, to succeed E. W. Howard, of San Mateo. Five more members of the board with date of expiration of their terms are as follows: C. J. Cherrue, Feb. 1, 1913; H. A. Jastro, Feb. 1, 1914; T. H. Ramsay, Feb. 1, 1914; Theo. Gier, Feb. 1, 1914; E. F. Mitchell, Feb. 1, 1912. If the Governor fills this entire list with new men, the balance of power and control of the State Fair will be in the hands of these appointees. As the voters of the State will be called upon this coming fall to sanction a big appropriation (about \$750,000 we think) for the purchase of more land and the erection of more modern buildings for the State Fair, the personnel of the appointments as directors of the State Agricultural Society will be of great interest to the farmers and fair exhibitors.

Fruit Trees for the Exposition.

John MacLaren, superintendent of Golden Gate Park and chief landscape gardener of the Exposition, stated to the writer last week that he was meeting with fine success in his work of securing full-sized growing fruit and ornamental trees for the Panama-Pacific grounds. Orange trees from Cloverdale, Sacramento, Tulare, and southern California sections have already been boxed in the ground and will in time be moved and set out in their new home, which will show visitors real trees with fruit growing on them. The lot of extra large palms of the California Nursery Co. at Niles are also being prepared for shipment. Some of the palms are more than 20 feet high. Already several big eucalyptus have been moved to permanent positions on the grounds, without the trees showing distress or even loss of leaves. Mr. MacLaren promises a very fine horticultural and floral exhibit to visitors at the big fair next year.

Dried Fruit Market.

Bulletin No. 27, issued January 31 by the California Cured Fruit Exchange at Sacramento, states that at present the demand for prunes at high prices is such that it believes the supply will be exhausted within the next 60 days. Raisins and figs are dull, but some buying is steadily going on, and the prospects are good for cleaning up the crop this spring. Apricots and apples are commanding high prices and will soon be all sold. The pears in the hands of the Exchange are also moving, in fact it has only a half car unsold. Regarding peaches, Mr. Dargitz, the Exchange manager, says that he understands that San Francisco brokers have bought the entire tonnage of the Clovis Fruit Co. at 4c per pound, also that brokers are buying all they can of the peaches held by growers in the Fresno section at that price. He states that the Exchange has only about 150 tons of peaches on hand, and that the sales it has made of this fruit have been at higher prices than the brokers are offering.

Vegetable Prospects Good.

At the annual meeting of the Ru-

barb Association of San Leandro, held recently, the reports showed a prosperous year just past for the growers and prospects good for the coming season. Alameda county is the greatest rhubarb section in California, and an effort is being made to secure as members 90% of the growers. Fred Stenzel is the new president and H. T. Smyth secretary of the Association.

The chili pepper acreage in Orange county is growing rapidly. It is stated that nearly twice the amount will be planted this season over last, when there was within the Graden Grove territory about 700 acres of peppers. This season there will probably be from 1000 to 1200. With the coming of the new dryer to Garden Grove, where the time for drying the green product is cut down about one-half, there is a new interest in this crop. The Terra Bella Fruit Growers' Association, which is a co-operative company, paid the growers \$35.40 net per ton for the tomatoes shipped fresh last fall. Returns have been received for all but one car of casabas shipped by local growers, the best price secured being \$3.44 per crate, or \$769.10 for the car. This car netted the growers above \$1 per crate.

The cantaloupe crop in the Imperial valley will be very early, possibly shipments may commence by May 1st. According to figures compiled by L. C. Siebert, the cantaloupe acreage this year will be 8177 acres in that section.

Heavy Tree Planting.

Prospects for a good nursery season at this time are fine, especially in deciduous lines. Already we learn of short stocks of plums and prunes. Owing to the high prices paid for olives, we expect to see heavy planting of that fruit. We understand that there is a large amount of citrus nursery stock in the State which has not been true for several seasons past. Good orange and lemon trees can be had at fair prices. A new nursery will be started to help supply the Sacramento valley by W. A. Yerxa, a prominent rancher near Princeton, Colusa county. He has placed an order in France for 250,000 myrobalan roots, 100,000 of these roots having already been shipped. A. R. Galloway, horticultural commissioner of Sonoma county, reports heavy tree planting in that section. He has already examined over 50,000 nursery trees, besides berry, grape, and ornamental stuff. Of the trees examined, over 35,000 were prunes, showing heavy increase in the acreage of this fruit.

Imperial Cotton Growing a Success.

F. W. Waite, horticultural commissioner, tells of the success that has been made by cotton growers in the Imperial valley and of the great prospects for the future. He says that the first cotton was tried out in that section in 1904, and experiments continued till 1909, when 1200 acres were planted, and owing to failure to cultivate, only 350 bales were ginned. In 1910 the acreage was increased about eight times, when 4000 bales were ginned. In 1912 the acreage was reduced to 8360 acres, the result being very satisfactory, as 7200 bales were secured. During 1913 there were 26,000 acres planted, including the delta across the Mexican line, and the

crop ran from one bale, a bale and a half, and in some instances to two bales per acre. The total crop was about 19,000 bales, which are selling from \$60 to \$75 per bale. The 1914 crop will be about 40,000 acres from the Imperial valley, which means another source of revenue to this State.

Raisin Exchange to Quit.

The California Raisin Exchange is to suspend operations indefinitely. This organization was the running mate of the California Associated Raisin Co., both being organized about two years ago by W. R. Nutting and associates in an effort to put the raisin industry on a paying business. Through the selling end, the Asso-

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The right spraying material made by a reliable concern will do the work it's intended to do. And you can't tell until you see the fruit on the trees, whether or not the material you used was right. That time is too late to know your mistake.

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ciated company has now the raisin crop of the State in its control, there is no especial need for the educational branch, or the Raisin Exchange, to continue, and as the funds were low it was decided last week to close up its affairs. Mr. Nutting will, it is stated, devote his time in the future to experiments in date growing, of which industry he has been making a study for several years.

Chris Jorgensen has resigned as manager of the American Vineyard Co., of Fresno, and will be succeeded by F. A. Seymour of the Pacific Commercial Co. of Manila.

New Markets for Fruit.
A delegation of fruit shippers left



French Prune Trees and Blenheim Apricots

Guaranteed Pedigreed Stock

Prunes on Myrobolan, Almond, Peach or Apricot Root

Grafted Walnuts, Almonds
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Sacramento, February 1st, to attend the convention of Western Fruit Jobbers at Kansas City, in session this week. Three projects of direct interest to Californians will come before the convention—the 1915 convention for Los Angeles, the standardized apple box, and the permission of one stoppage of carload fruit shipments. The last of these is of particular interest to this section of the State, for if the railroads will agree to permit a carload of fruit shipped from Sacramento (as an example) and billed to Chicago, to be opened and part of the fruit removed at some intermediate point, it will mean a new market for California fruit. Many of the smaller cities of the East and Middle West, which cannot handle a full car of fruit and which on that account have heretofore been barred from the use of the California product, will, if this arrangement is indorsed by the railroads, be large purchasers of such fruit. It is estimated that in the first year alone several hundred cars would be sold and in an entirely new market.

Fruit Growers' Organizations.

Olive growers will meet at Lindsay on February 7th to perfect a co-operative organization. It is proposed to erect and conduct an olive pickling and oil plant.

An emergency citrus convention was held at Ontario last week to discuss the mealy bug and how best to control it. A good attendance was had of growers through that section.

At the annual meeting of the Terra Bella fruit growers last week the report of the canning plant's first year's operations showed that institution to be in a prosperous condition. The capital stock was increased from \$10,000 to \$25,000.

The San Joaquin County Table Grape Growers' Association held its annual meeting at Lodi last Monday. The question of the Association marketing its own fruit in the East, instead of through brokers, was discussed.

An agricultural students' club of 33 members was organized at the San Jose high school last week. The work of the club will be directed by the State Agricultural College.

Dry Farming Experiment.

The Kings County Development Co. is now putting into operation plans to conserve the natural moisture by putting into practice the methods of what is known as "dry farming," such as has proved successful in the arid portion of Colorado and other States, and down in San Diego county. The method is chiefly deep plowing with a continuous cultivation of the soil to form the dust mulch which conserves the moisture by preventing evaporation, and abundant crops have been the result where the methods have been thoroughly put in practice. The operations are now under way in Township 19, Range 17, just over the Kings county line in Fresno county near Huron.

Exhibits for the Exposition.

A. Filcher, of Sacramento, and V. A. Hancock, of Santa Clara county, are president and secretary, respectively, of the California State Exposition Association. This organization will have charge of the exhibits at the California State building.

In order that live stock farmers and agriculturists of Kings county may,



"Everybody's Doing It."

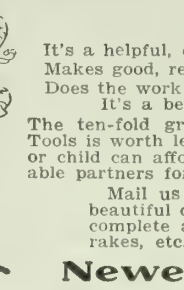
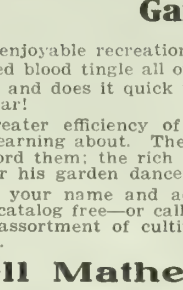
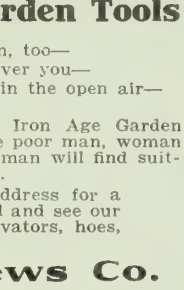
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during the spring and summer, have before them the idea of growing exhibit products, the directors of the

Kings County Fair Association, at its meeting recently, appointed a live
(Continued on Page 188.)

Advice on Silos

To the Editor: I would like your advice on the following silo plans: I had thought of building one of 2x4s, laid flat ways around the building, octagon shape, about 14x32 feet. Does a silo have to be airtight or will the ensilage fill the cracks?

Alfalfa is about the only crop, with the exception of a little corn fodder, that we should have to fill it with. Should the alfalfa be taken right from the mower and be chopped? Should there be any salt used and to what extent should it be tramped? What is the feeding value of alfalfa ensilage over alfalfa hay? How long would a silo of that size feed 20 cows with all of the alfalfa hay that they want to eat? What is good for warts on a calf's head?—J. M. M., Fort Jones, Siskiyou County.

ANSWER BY J. C. LOOMIS.

Our advice would be to let the octagon shaped silo alone and build instead a round one. The pressure of silage is toward the bottom and sides and when you put such a pressure against a square corner, it is only natural that the best of joints will give way, and then your silage as well as the cost of building is lost. On the other hand a silo without any corners, such as the common round silo, is evenly braced all around, if properly made, and does not allow of such chances.

In brief the way to build the resaw and studded silo, as usually seen, is to lay a cement foundation, either on top of the ground or in a pit six or eight feet deep, preferably the latter as there is not so much danger of strong winds. Cement wall should be six inches thick and plates laid on top. The studding may be either two by fours, or two by sixes, set on centers, 16 inches apart. Redwood resaw is usually used for lining the inside walls as it is free from bad knots and does not shrink so badly as other woods. The first lining is nailed to the bare studding and after it is completed, to the top, a covering of building paper or tarred paper is applied, followed by another course of resaw, which completes the job. You should be careful that the cracks do not come parallel to each other so that there will be no danger of leakage, should the paper be broken some time. It is not necessary to put a course of resaw on the outside walls, although many do so, as they can better protect the studding from the weather in that way. If a roof is needed, which is, if in a climate where severe winters are found, it should be conical in shape.

Openings for throwing the silage out may either be three or four feet apart, or may be of the continuous kind. This whole subject has been taken up very thoroughly, in these columns, many times during the past few months.

If the silo is not tight, the ensilage will, as you suggest, fill up the cracks, if they are not too numerous, but in doing so a great deal of silage is wasted. Making silage might be compared to making sour krout, if the air hits it before being fed, it's goodbye to that batch.

If you have corn, use it by all means, as that makes the best ensilage. Alfalfa may also be used advantageously, as you perhaps noticed in last week's issue. It should be hauled directly after cutting and run through the cutter. The only advantages of alfalfa silages over alfalfa hay

other than mentioned elsewhere, seems to be in the value of it as a green feed, for alfalfa silage is nearer to alfalfa pasture, and does not have the disadvantage of bloating the stock.

A silo 15 by 32 would feed 20 cows, 11 months if 35 pounds a day was used for the ration, which is about the average amount fed. Larger cows eat more than smaller ones.

It is not necessary to salt silage, although many do it in the belief that it is more palatable, in that way. The tramping is really one of the most important parts of the work and one should not neglect that work above all others. The common way is to have one or two men, inside of the silo, who do nothing else but tramp the outside edges. The spout is turned around the outside edge, until it has been built up above the center, then allowed to shoot into the center. The center does not need any tramping as it will take care of itself, but if good silage is to result, the outside edges should be packed down so that they will exclude all air that may get in, through the holes or cracks in the wall.

Warts or tumors of the skin. In their early stages, they may be destroyed by a solution of pure acetic acid, applying it drop by drop until the wart is saturated and soft. In a week or ten days the wart should come off. If it has been removed by the roots another application should be made.

If warts are large the best way is to cut them out with a knife; should they bleed profusely, the severed blood vessels may be seared with a hot iron. Another good method is to tie a stout string or rubber band firmly around the base of the wart, which will then soon slough off. Warts should be treated as soon as they are noticed.

CONDITION OF CATTLE RAISING IN CHILE.

Since the tariff reduction on fresh meats to this country there has been a great deal of interest displayed as to what condition the foreign countries were in regarding beef production.

From the following taken from a Consular Report from Chile, it is evident that the condition in that country is none too promising at the present time. The views are those of a prominent cattle man and agriculturalist of that country.

He states that Chile has been importing cattle for food in a gradually increasing quantity since 1870. This places the country each day in a more difficult position as regards its food supply, though he considers that there is no real reason for this, as he thinks that Chile can and should raise enough cattle not only for home consumption, but even for exportation to other countries on the Pacific coast, if proper attention were bestowed on the matter. From the Province of Colchagua to that of Chile, inclusive, there are 10,500,000 acres now unoccupied and suited for cattle raising; in addition there are 25,000,000 acres of woodlands, where many cattle are being raised; and the slopes of the Andine and the Coast Cordilleras can also be used for cattle. Chile has in all at least 35,000,000 acres which could be utilized for increasing its cattle supply.

He also points out that Chile has only 2,674,660 head of cattle in its total area of 292,580 square miles, or 9 cattle per square mile, while Ireland

has 4,645,222 head of cattle in 32,605 square miles, or 142 to the square mile, and France has 14,520,832 head in 207,054 square miles, or about 70 to the square mile.

He deprecates the excessive slaughter of cows for meat in Chile. In 1905, of 370,281 cattle killed, more cows were killed than any other kind; 136,509 cows, 124,766 steers, 90,335 bulls and oxen, and 18,671 calves having been slaughtered.

In 1872, 15,000 head of Argentine cattle were imported into Chile. In 1882 this number rose to 40,800; in 1908, 105,238; in 1909, 129,365; in 1910, 81,339; in 1911, the latest year for which there are statistics, 101,905.

The importance of the foregoing to the United States is twofold; first, because it shows that one of the largest South American countries is now a heavy importer of meat; second, that some day Chile may be able to export some meat, when the country's resources have been fully developed.

BLACK LEG LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for immediate and complete information. 10-dose pkgs. Blackleg Pills \$1.00 50-dose pkgs. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.50 Discounts: 25% discount on 10-dose pkgs. 50% discount on 50-dose pkgs. 75% discount on 100-dose pkgs. Do not use old vaccine. Insist on Cutter's. If unobtainable, order direct. Send check or M.O. we will charge and ship promptly. CUTTER LABORATORIES, Berkeley, California.

Belgian Stallions

Have for sale Bay 4-year-old, weighs 1950 in ordinary condition; took first premium at 1913 State Fair; his dam imported mare Rosebud, weighs 2318 lb.; took first premium and gold medal sweepstakes at 1913 State Fair; sired by imported stallion Derby. Have at my place 30 colts by this stallion. A proven sure getter of fine foals. Also a sorrel 3-year-old, weighs 2000; will weigh 2300 when mature. His dam imported mare Lizzie de More; took second premium at 1913 State Fair as an individual; first premium as mare and colt, and first for mare and two colts under 4 years; sired by Derby. Prices reasonable and will make terms that will allow purchaser to earn good part of purchase price with the stallions. Call at my place and see these fine young stallions and their get.

H. L. WEST, Hamilton, Cal.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.

BREEDER OF

SHORT-HORN CATTLE SHROPSHIRE and MERINO SHEEP



KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

America's Leading Horse Importers

PERCHERONS

Our recent importation arrived at our Oakland Stables December 13th. At the International Live Stock Exposition, Chicago, December, 1913, our stallions won two Gold Medals; two Championship Ribbons; two Second Prize Ribbons. There were over 600 Percherons at this great show.

If you want the best, let us hear from you. McLAUGHLIN PERCHERON COMPANY
Kansas City, Mo. Oakland, Cal.



Salvador Stock Farm Shire Horses

Don't Sign That Note for \$3000

I will sell you a better horse for half the money.



HENRY WHEATLEY,
NAPA, CAL.

Selection of Dairy Cows.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

Intelligent selection of dairy cows is one of, if not the most important duty of the dairyman, and while this fact has long been known by all of the more progressive dairymen it has been sadly neglected by the vast majority and for this reason we often find men who have spent considerable money and time "pulling teats" as they call it and who when asked for their opinion are eager to answer that there is nothing but hard work connected with the business.

Very likely a good many of these men have made mistakes in feeding or caring for their stock but the majority of such cases are usually traced to the improper selection of their herds. In a good many cases this is done when the first cow is purchased in which case one has to depend almost entirely upon his knowledge of the right type for while the one who is selling the stock may be thoroughly honest in his opinion that the cow is a good individual, he usually bases his judgment upon the amount of milk that she gives rather than upon the quality.

It has been pretty thoroughly demonstrated at the different experimental stations that an animal that has good dairy type is more apt to be a producer of fat than one with little or no type but even the most expert of judges cannot tell how profitable a cow is without the aid of the Babcock tester, so in selection we find that the only sure and safe way is through persistent testing with that machine.

It is very unlikely that any of those men above referred to as "has beens" ever used the tester and scales for if they had they would have found that there is pleasure and money in dairying as well as work where it is intelligently followed and that herds which have been systematically culled in this way are more sure of being profitable than where ones judgment of type alone is depended upon.

Just why the Babcock tester is not seen on more ranches is hard to say unless perhaps the dairymen use the amount of their cream check as a basis for their figures and this is very unsatisfactory for even granting that the creamery has given fair tests (which is more apt to happen than ever before) these tests are for the total amount of milk received from the herd and cannot be applied to individuals in the herd. Taken as a whole this plan usually proves very unsatisfactory and does not give the high producers in the herd credit.

Quite recently we had an opportunity of seeing how badly mistaken a man may be even though he may be an expert judge of the right dairy type. This man said that he had been a dairyman for over 30 years and that he considered that his judgment of a cow was as good as the next one. That this was no idle boast could be seen in the prosperous aspect of the ranch and buildings but he also stated that during the month previous he had had his eyes opened through the scales and Babcock test.

This happened through his having joined a local cow testing association in which he had all of his stock entered "just as an experiment" he said.

The results were so surprising to him that he is now one of the best boosters of the tester in that com-

munity, for he found that some of those cows which had given a large flow of milk did not produce nearly as much fat as others in the herd with a smaller flow of milk but who had a higher test.

Not only was he mistaken in the results at the pail but what was more important he was raising all of the heifer calves from those giving the smaller amount of fat and selling some of those from what he had supposed were his poorer cows and in this way he was not making nearly so much advancement as it would have been possible for him had he used the tester from the start.

The cost of a tester is so small that every dairyman could well afford to have one, in fact there are very few dairy appliances that can be purchased so reasonably, and as there are complete directions sent out with each machine there is every reason why more dairymen should use them, if it is hoped to get the utmost efficiency from the herd.

SOILING SORGHUM, TEST OF CREAM, ETC.

To the Editor: Will you advise me as to the value of sorghum for succulent feed for cows in summer, cut and fed green. How many times can same field be cut? Is it safe? Our land is not ready for alfalfa and we want something to take its place for green feed. How many pounds of butter fat per year should one expect from a first class dairy cow well cared for? What should be paid for such cows at the present time? We have been advised that one should have a cream separator set so that cream will test from 32 to 35 per cent and yet with separator adjusted in this manner we received an average of one-eighth pound of butter fat per day less from 25 pounds of milk than when adjusted to test 24 to 28. I cannot see why the higher test is better when I get more money from the lower test. Please explain and oblige W. B. R., Porterville.

ANSWER BY J. C. LOOMIS.

Colonists have substituted sorghum for alfalfa for quite a while, but it needs alfalfa as soon as possible to balance the ration. We have known of cases where sorghum was used in connection with alfalfa hay and proved an excellent feed. If it is allowed to wilt before feeding there is no danger from poisoning, and for this reason it is better to cut and haul in as you suggest. If you have water for irrigation it will keep growing all summer and fall and furnish green feed the entire time but it depends upon the care and soil how many times you can cut it, also upon how high you let it grow before cutting. Frost will end it.

What one should expect from a cow in a year depends upon the man, as is shown by some dairymen who are satisfied with a 150 pound cow, while others do not keep one that gives less than 300 pounds a year.

It is estimated that it costs about \$50 a year to feed and care for a cow under California conditions, where alfalfa is the main feed, so with fat at an average of 30 cents a pound a cow that gives 150 pounds of fat just about pays for her keep and no more. There are many cows that do not give more than that amount that are sold for from \$50 up according to how bad a buy the purchaser makes, and for that reason

it is hard for us to say what the average price is at this or any other time.

In your county you should be able to purchase good grade cows with a production of from 200 to 300 pounds of fat for from \$80 up (again depending upon how good a buyer you are.)

The best way to get a herd of high producing grades is to buy the best cows that you can get and breed up with a pure bred bull who has reasonably good milk records back of him, as most of those who have good grades in this State at present do not want to part with them.

In separating milk there should be no difference in the amount of fat in the milk, whether you were skimming 25 per cent cream or 45 per cent, as in either case you are supposed to get all of the fat in the milk, the only difference being that where 25 per cent is the standard, you are sending a larger

portion of skim milk from the ranch to the creamery than you would if you skimmed a higher testing cream. It is very likely that some other thing is the cause of your decreased amount of fat. It may be that there is a difference in the temperature or you may have increased or decreased the speed of the separator which often times is the cause of much wasted fat.

The term 25 per cent means that there are 25 pounds of cream in a hundred pounds of milk, and the only difference in your case, providing all other work is done in the same manner, would be that you are giving the creamery about ten pounds more of skim milk. It is for this reason that most dairymen set their separator so as to skim from 35 to 40 per cent cream, as anything above that is hard to handle and is more apt to cause a loss through being too thick.

Bulls For Sale

60 HEAD SHORTHORN BULLS

Highly Bred, Well Developed
Individuals in Good Condition

This bunch contains 3 registered bulls in every way fit for
herd-headers.

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WOODLAND, YOLO CO., CAL.

T. B. GIBSON, Owner.

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes
For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six
firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five
seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON
—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven, firsts and seconds, sweep-
stakes over all breeds, champion ram first and second, champion ewe
first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.



Fills Your Silo Quickly With Less Power and Labor
You can operate this machine with a 4 h. p. gasoline engine. It's the lightest running blower type of ensilage cutter made—The *thru-shaft*, *blowing*, *lifting* force carries the ensilage in a steady full stream rapidly up into the highest silo without waste of power. The ensilage packs perfectly and keeps sweet and succulent. The
PAPEC ENSILAGE CUTTER
is easy to set up and take down. Simple in construction, not easy to get out of order. The entire frame is one solid piece of semi-steel. The bearings are always in line, run smoothly and will not heat. The feeding mechanism is geared to the main shaft—always gives you the desired length of cut. The *Papec Ensilage Cutter* is not chain driven, but has heavy gears which transmit all the power. It cuts ensilage perfectly and swiftly—as fast as you can bring the corn to the machine.
Write for Illustrated Catalog. Send today for this book. It shows how The "Wonderful Papec" cuts ensilage with less power, time and labor, 25 convenient distributing points in the U. S.



WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts.

San Francisco

With the Live Stock Men.

A mistake was made in our Breeders' Sales Department last week which we wish to rectify. Under the heading Guernseys, the name of R. F. Guerin, was given as a breeder of that breed instead of A. B. Humphreys, of Mayhews. Mr. Guerin is a Holstein breeder.

According to figures recently published, the amount of Australian butter received at the San Francisco custom house, for the month of January, was far in excess of that of any previous month, since the tariff was lowered. The following shows what has been received each month since last May: May, 1912, 48 pounds; July, 1912, 254 pounds; November, 1912, 19,944 pounds; December, 1912, 36,405 pounds; January, 1913, 560 pounds; February, 1913, 5610 pounds; March, 1913, 112 pounds; April, 1913, 35 pounds; June, 1913, 336 pounds; July, 1913, 299 pounds; August, 1913, 506 pounds; October, 1913, 104,200 pounds; November, 1913, 345,840 pounds; December, 1913, 281,084 pounds; January, 1914, 749,454 pounds. This does not represent all of the butter received, as various amounts have been received at different times from transshipment from northern points.

John Imboden, a well known cattleman of the East, remarked at the recent live stock convention, held in Denver, that under present conditions the breeder and grower of cattle are getting all the profit out of the beef making transaction and in his judgment they will continue to enjoy that advantageous position. While the above is very likely true, the scarcity of cattle in this state is making it hard for the grower to participate as fully as they should. It shows, however, that the opportunity for profitable beef production is now better than it has been for some time.

A dispatch from Riverdale, states that over a half million pounds of

butter was made by the Co-operative creamery of that place last year, and that the prices received for butter in the Los Angeles market averaged 1.48 cents per pound higher than the average price of all butter sold in that market.

A report from Montague, Siskiyou county, says that during the months of December and January the shipments of beef cattle, hogs and sheep have been large, carload lots having been sent to different points in Oregon and California.

Over 300 dairymen attended the auction sale held on the Tonis Lino ranch, near Modesto, last week. The average price paid for the stock sold was \$80.50.

Williams and Brubeck are reported to have recently shipped six or seven carloads of Mexican cattle to Concord, Contra Costa county, where they will be pastured.

Articles of incorporation were filed last week for what is to be known as the Butte County Creamery, to be located at Chico. This is a much needed enterprise in that place as heretofore most of the cream has been shipped to outside points.

The McLaughlin Percheron company, of Oakland, have recently sold two fine Percheron stallions to a number of Tulare county farmers. The price paid for the two animals was said to be \$9600.

A report from Nevada states that only the choicest wool is bringing 10 cents a pound and that the poorer grades are selling for much less. It looks as if the tariff was working a hardship on sheep men in that state.

The Oakdale creamery, which has only been in operation a short time, made 25,000 pounds of butter during

Live Stock Directory

SWINE.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND CHINAS—Still have a few extra nice gilts for sale at \$15 each, and one bred sow. N. M. Lester, R. 1, Gridley, Cal.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Heary, Farmington.

MULEFOOT HOGS—Best for Pacific Coast. Jno. Dunlap, Williamsport, Ohio.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

BLACK JACK FOR SALE—Price \$500; 7 years old, is quick and sure. We have 6 more jacks. We took all prizes for mules at State Fair, 1913. Kelley & Son, Lodi, R. D. 3, Box 93.

WORLD'S CHAMPION STUD of Percheron Horses for sale at lowest prices and best guarantee backed by \$100,000 real estate. E. F. Kleinmeyer, Covina, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BREEDING JACKS FOR SALE—Prices reasonable. Correspondence solicited. E. R. Elliott, Route 2, Box 57, Modesto, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH, property of Mr. and Mrs. E. C. Rand—Fine young Berkshire boars for sale, March farrow. Route 3, Box 69, Santa Rosa, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

DAIRY CATTLE.

FOR SALE—One pure-bred Holstein bull, Prince Beauty Pieterij Segls H. B. No. 84485, born Jan. 12, 1911, sired by Beauty Pieterij Prince 56435, and of the dam Belle Segls 86647. For detail information inquire of Mr. A. Sutter, 815 Wells Fargo Nevada Bank Bldg., San Francisco, Cal.

REG. HOLSTEINS—We offer choice grandsons of King Segls, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

I NOW HAVE TO OFFER a young bull born Nov. 18, 1913, sired by Acme Pontiac, whose grandsire is King of the Pontiacs, and out of a dam with a butter record of 23,905 lbs. milk 595.1 lbs. in seven days. Price \$300. J. W. Benoit, Route 2, Modesto, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Millitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

PERCHERONS

Pure-bred and registered. If you want good ones, I've got them.

E. S. PORTER, Los Molinos, Cal.
One-half mile south of town.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

A. C. RUBY, Portland, Ore.

C. W. BOWERS, Davis.

Ruby & Bowers

The Largest Horse Importers on the Pacific Coast.

A carload just received at Davis.

We sell more imported horses than all other firms on the Coast because we are direct importers and give a four-year guarantee which is good right at home. We have on hand at all times the largest and best lot of heavy draft stallions and mares, both American bred and imported, to be found any place in the West. If you are in the market for a high-class stallion or mare, don't fail to give us a call, as we can sell you more genuine horse for the money than any other importer in the business. Our stallions at from \$1000 up can't be beat anywhere.

ADDRESS

RUBY & BOWERS, Davis, Cal.

We Have Imported More Horses Than Any Other Firm in the United States During the Last Year.

References: American Natl. Bank, Pendleton, Ore. Merchants Natl. Bank, Portland, Ore. Bank of Yolo, Davis, Cal.



Going East For Live Stock

Have now orders for several carloads of high-class registered Holstein cows, part to be A. R. O.

Will visit the great Holstein center of New York.

Now is your opportunity to secure live stock to strengthen your herds and flocks for the Panama-Pacific, and have them ready to do their best in 1915.

Write me your wants or call and see me. Shall leave next week.

W. M. CARRUTHERS,

Phone: Kearny 456.

721 Hearst Building, San Francisco.

the month of December and paid an average of 36 cents per pound.

Ralph Bishop who lives 10 miles west of Fresno, has recently installed B. L. K. milking machines. He is now milking 14 cows but will increase the number to 28 by spring. All the good heifers are raised to increase the herd and replace the poorer cows. More dairymen in California should follow this system, instead of killing off all the heifers and then buying cows to renew the herd. Mr. Bishop keeps a pure-bred Holstein bull. On this ranch a very handy little device for straining the milk was used. An old can top was taken, the bottom was cut out and a fine wire strainer cloth soldered in its place. This strainer fits tight to the can so that no flies get into the milk, nor can it be knocked off on to the floor.

R. M. Dunlap of the Simon Newman Co., of Newman, sold four splendid young Herefords to A. A. Howard and J. A. Niles of Porterville. Mr. Howard got Goldenwealth, a young bull, who at 8 months old weighed 700 pounds. Also two heifers, Crimson Light and Newman Muse. The sire of these three animals is Beau Stonley, who although he himself is not a show bull, has a great many sons and daughters who have won blue ribbons in the show ring. Beau Stonley was bred by Wm. Rockefeller. J. A. Niles was very fortunate in securing Donald's Heir, a son of Young Donald, who heads Simon Newman Co.'s show herd. Young Donald won first in his class, Senior Championship and Grand Championship at the 1913 State Fair. Young Donald weighs 2300 pounds and is the son of Beau Stonley. The dam of Donald's Heir, Sweet Lass, is an exceptionally fine animal, winning first as a two-year old at the State Fair in 1912. Mr. Wade, superintendent of the Simon Newman Co., says that they cannot near begin to supply the demand for pure-bred Herefords. At the present time they have only 17 bulls left to sell this season. The stockmen of California are beginning to realize that they must get better blood into their herds.

The Bureau of Statistics in co-operation with the U. S. Weather Bureau, has issued the following statistics relative to stock in California: Horses in the state January 1, were 498,000 as compared with 503,000 a year ago, the price now is stated to be \$100 per head as against \$109 last year. The number of mules is given as 73,000, being the same as a year ago; while the value has depreciated from \$130 to \$120 per head. Milch cows have gained from 510,000 to 515,000 head and the value increased from \$53.50 to \$62 per head. Other cattle have lost in number from 1,454,000 to 1,410,000, but the value has gained from \$29.20 to \$33 per head. Sheep lost in number from 2,603,000 to 2,551,000 but gained 10 cents in value per head over the 1913 price of \$3.70. Swine lost in numbers from 882,000 to 797,000, but gained in value from \$9.20 to \$10.50.

About 35,000 cattle are fattening in the Salt River valley of Arizona. Practically all of them will go to the Pacific coast as buyers from that locality are already looking at them and are not able to conceal their needs. Asking prices are so high, however, that few trades have been consummated. The Salt River valley has fed as high as 45,000, but last year its output was

only 25,000. California is extremely short of fat cattle, owing to the long drouth, but feed is now abundant and depleted pasture areas are being restocked as fast as the necessary cattle can be secured.

In line with the policy recently adopted by the office of the state veterinarian, comes the appointment, under date of January 12, of George Gordon, D. V. S., of Hanford as a deputy state veterinarian for Kings county and some of its adjacent territory.

Chico is to have a new and up-to-date creamery. It is to be located in the Junction district, and the incorporators and stockholders are C. A. Monroe, S. H. Chalmers, George S. Jeffery, Frank Hawks and Denny Murphy of the Chico hotel. Articles of incorporation of the company, to be known as the Butte County Creamery, were filed last week.

Manuel E. Coute of Stratford, has sold his dairy herd to Martin Brothers. The herd numbered 42 milk cows, and the consideration was \$3000. The cows were taken to Corcoran, where one of the brothers live.

The horse is being used more and more in the cities. The number of horse-drawn vehicles in daily use in the downtown part of Chicago has increased 30% in the past two years, and it is estimated that 130,000 teams are in daily use on the business streets of that city. Statistics of eleven important cities of the United States show an average increase of 40% since 1912 of the licensed horse-drawn vehicles.

A NEW STATE CHAMPION COW.

During the past week we have received a letter from K. W. Abbott, of Milpitas, Santa Clara county, in which he says: "My junior four-year-old Holstein cow, Mabel Haskins of San Jose, has just completed an official record of 32,804 pounds of butter, from 679.8 pounds of milk. She is the state champion, by beating the record of Riverside Sadie De Kol Burke, and according to Secretary Gardner's report, up to November 28, she gains sixth place in her class for the United States.

The tester was here during the worst wind and rain storm that we have had, and as the cow was kept in an open and draughty barn she probably did not quite do her best, however, she is now giving 102 pounds of milk per day and will gain.

[Although Mr. Abbott does not say so, in his letter we infer that this was the weekly record of the cow. In writing of the work that was being done on this place, some time ago, we predicted that good results would follow, on account of the time that was being given to the testing and weighing of milk, also of the milk records that were kept. Although a young breeder of pure-bred cattle, it is evident from the results so far obtained that the herd on the Moorland Farm will be productive of more big producing cows.—EDITOR.]

Recent experiments conducted by the Postoffice Department, with a view to increasing the weight limit of the parcel post, have proven so successful that parcels weighing 100 pounds soon

DE LAVAL

Butter Triumphs as Usual at the NATIONAL DAIRY SHOW

BUTTER made from cream separated by De Laval Separators made the usual clean sweep of all highest awards at the great 1913 Chicago National Dairy Show and Annual Convention of the National Butter-makers' Association, just as it has always done every year since the organization of the National Association in 1892.

Whole Milk Creamery Butter

The highest score in this class was awarded to O. N. Peterson, of Rapidan, Minn., a De Laval user, as were 187 out of 200 whole milk creamery entries.

Gathered Cream Creamery Butter

The highest score in the gathered cream factory-made butter class was given R. O. Brye, of the Readstown Creamery Co., Readstown, Wis., this prize-winning butter being made from the cream farm patrons, all using De Laval Cream Separators.

Farm Dairy Butter

The highest score in this class was awarded to Mrs. D. H. Turnbull, of Monmouth, Ill., whose family has been using De Laval Cream Separators for over twenty years.

De Laval Superiority Indisputable

The evidence of the superiority of De Laval cream and butter, demonstrated by the winning of all highest awards the world over for thirty years, is so overwhelming as to be indisputable and unanswerable. A De Laval catalog, to be had for the asking, will make plain the reasons for it.

Fill out the coupon or give information asked for in a letter or postal and get this 72 page book free



THE DE LAVAL SEPARATOR CO.,
165 Broadway, New York.

Please mail me, postage free, your Dairy Handbook.

I keep.....cows. I sell cream, make butter, sell

milk (which?).....The make of my

Separator is....., used.....years

Name

Town State

DE LAVAL DAIRY SUPPLY COMPANY

165 Broadway
NEW YORK

101 Drumm Street
SAN FRANCISCO

1016 Western Avenue
SEATTLE

may be shipped by mail. The weight limit of parcels at present is 50 pounds.

"The 100-pound weight limit has no terrors for me," Postmaster General Burleson declared last week. He ex-

pressed the belief that 600,000,000 parcels would be transported through the mails during the year beginning July 1 next, with a revenue of approximately 10 cents each.

Reasons For Raising Mules.

A lot of boosting in favor of raising good horses has been done, but in the way of publicity little has been said in favor of the mule and possibly also, mule raising has frequently been neglected on the farm as a direct consequence of this. It is at least certain that there is lots of money in good mules, which can be turned off a year sooner than geldings from the same mares and which command higher prices as a rule also. A very concise statement of the situation is given out by James W. McCord of Hanford in the following, which, of course, applies to good mules, not what would be gotten by breeding a scrub mare to a scrub jack or a jack of any other kind:

1. They can be raised cheaper than any other stock.
2. They will go into market sooner than horses.
3. They are marketable any time from weaning time (four months old) until incapacitated by old age.
4. They are less liable to contract disease than the horse.
5. Pasture a number of colts through grazing season and you will find plenty of blemishes at feeding time. Mules prove the contrary, and have few if any, blemishes, and their value is not decreased by blemishes as a horse.
6. They are easy to raise, easy to sell and hard to blemish.
7. They instinctively avoid holes and dangerous places. A team of runaway mules seem to run more for sport than fright, and usually stop before damage is done, while a horse never stops until he is completely freed.
8. The mule is more steady when at work than the horse, less nervous, and is not so liable to become exhausted, and often becomes so well instructed and trusty as to need no driver or lines.
9. They can stand heat better than horses, are steady, and can be relied upon.
10. The mule can stand more abuse and hardship than a horse, but will respond as quickly as the horse to good feed and kind treatment.
11. The profit in mule raising is their quick growth, as mules are marketable at three years old. A horse colt cannot be sold to an advantage until five. So this expense of two years' feeding and handling is saved.
12. No kind of horseflesh is more stable in price, excepting thoroughbreds or fancy specimens. They will bring more per pound upon the open market or cost less to produce in the actual value of food consumed and time and labor required.
13. There is always a steady demand for good mules at a high price and they are very highly prized. Why? Because they must have them. They endure all kinds of hardships.
14. Buyers make money by buying at weaning time, and by pasturing and feeding eighteen months have them ready for the market. Mules can be raised and handled as easily as a lot of cattle and sheep.
15. One steer will eat as much as a team of mules. A good steer at three years old is worth \$70 or \$75. A team of mules at the same age (good ones) will sell for \$250 to \$500, having eaten no more feed.
16. Feed the same amount to a bunch of mules that you do to your

hogs, and see which will make you the most money.

17. A good cow, fed to make butter, will consume as much or more feed than a team of mules from the time dropped until three years old.

18. As for line animals, they can not be beaten, and are being used on the farm more extensively for this purpose. Also in our large cities they are being used extensively for draying and heavy street work, standing the wear of the hard streets twice as long as a horse.

19. As they will not breed, they were created for a special purpose, and that is as true, honest, durable and valuable workers, taking the place of a team of horses and lasting much longer. Use the mule for all tasks. He will be your patient drudge and slave. He will work without a murmur, nights without sleep, and Sundays without sin.

The reader will probably say, "Why are not more mules raised?" Simply because in most localities there are no jacks to breed to. Good mules can not be raised unless you breed to a good jack. An inferior jack should never be used at any price.

Dealers claim mules are more scarce in the southern states than they have been for over twenty years, and are consequently being bought through the northern states. Cuba, Porto Rico, Philippines and South Africa are taking large numbers and will continue to get their supply from this country and all foreign countries are equipping their armies with American mules, you will therefore readily see no stock the farmer can raise has so bright a future as the mule.

Mule colts sell better than anything on the farm. No farmer has ever lost money on keeping jacks and raising mules.

No man will lose money in the mule business. Mules are a staple article.

NEW WORLD'S RECORD AYRSHIRE.

In a report to this office C. M. Winslow, secretary of the Ayrshire Record association, states that the cow Auchenbrain Brown Kate 4th, has just broke the worlds record for that breed by producing 23,022 pounds of milk containing 917.6 pounds of butter fat in the year which would make 1080 pounds of butter.

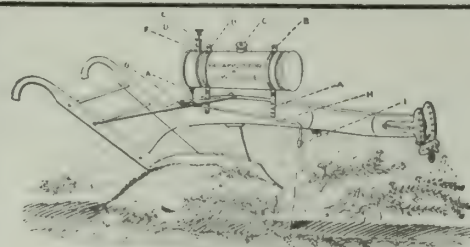
The record was formerly held by the cow Lilly of Willowmoor and the performance of this animal makes four Ayrshires that have produced over 20,000 pounds of milk during the past year. Secretary Winslow further says:

With the above record in the dairy testing, and the record of Kilford Bell 3d in the show ring, winning the \$500 Valentine Silver Trophy at the National Dairy Show as the best cow of any breed, it certainly looks like advancement in the Ayrshire Breeders' Association in giving to the world a cow that is perfect in conformation and another with great dairy ability, both in one year.

The Ayrshire is rapidly forging to the front as a perfect dairy cow, in conformation, attracting more attention at all our leading dairy shows than any other breed, and in the advanced registry testing, showing a remarkable average for the breed both in quantity and quality of milk.

At the Portland Union Stock Yards last week prices were rather low and buying not very active, especially of beef stock. The receipts of cattle were 748 head and the average prices rang-

ed from \$7.75 to \$7.35. Hogs totaled 5243 head, which sold for \$2.15 down to \$8 per hundred. Sheep receipts were 6243, and averaged from \$6.65 for lambs down to \$4.25 for ewes.



USE "Nonpareil" and the PRESTO PLOW TANK

For Exterminating Morning Glory, Johnson Grass, Bermuda Grass, and all Weeds, Insects and Germs that dwell in the ground.

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, \$8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

Now is the right season to do the work. Farmers have tried useless methods for years. Nonpareil with Presto Plow Tank does the work.

One large grower has purchased up to date this year \$1500.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphids, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

WHEELER, REYNOLDS & STAUFFER
926 California Street San Francisco, Cal.

POLAND-CHINA HOGS

LARGE TYPE

YOUNG STOCK FOR SALE. BOTH SEXES.

THE BROWNING STOCK FARM.

W. H. Browning, Prop.

Woodland, Cal.

Best for Stock Breeders

For many years the PACIFIC RURAL PRESS has advocated the growing of better stock and the keeping of better bred farm animals. Its readers are educated to advantages of good breeding in stock. They are the most progressive farmers, dairymen and stockmen in every section of this State. They want and have the money to buy good breeding stock. The leading breeders know this and use its advertising columns regularly. Read what they say about results.

HILLCREST STOCK FARM.
Breeders of Short-horn Cattle,
Merino and Shropshire Sheep.

Davis, Cal., Jan. 15, 1914
The Pacific Rural Press.
Dear Sirs: In reply to your letter received some time ago, will state that the results received from advertising in your paper have been more than satisfactory; in fact, the best I have ever received.

Wish to compliment you on the improvement of your paper the past year and trust that you will have a prosperous year coming. With best regards, I remain

Yours very truly,
T. S. GLIDE.

A. W. MORRIS & SONS CORP.
Breeders of Holstein-Friesian Cattle.
Woodland, Cal., Dec. 23, 1913.

Pacific Rural Press.
Gentlemen: We have found the Pacific Rural Press to be an advertising medium of the highest order, and the results attained from our advertising in its columns have been gratifying. We find that it reaches the right class of farmers and stock growers.

A. W. MORRIS & SONS.
F. L. Morris.

Modesto, Cal., Jan. 9, 1914.
Pacific Rural Press,
420 Market St., San Francisco.

Dear Sirs: Have received excellent results from my advertisement in your paper during the past year. I wish you much success in the future.

Yours respectfully,
J. W. BENOIT.

SALVADOR STOCK FARM.
Breeder of Shire Horses.
Napa, Cal., Jan. 14, 1914.

Gentlemen: I consider the Pacific Rural Press a first-class advertising medium for live stock.

HENRY WHEATLEY, Prop.

Farmington, Cal., Jan. 13, 1914.
Pacific Rural Press.

Gentlemen: I am just writing to thank you for the splendid assistance I have received from advertising in your paper this year. I have sold over \$4000 of thoroughbred Poland-China hogs this year and a great number of these sales have been through the notice you have given my stock in your columns.

May you have the best of success; you surely deserve it.

A. M. HENRY.
Breeder of Poland-Chinas.

RANCHO DOS RIOS.
Breeders of Jerseys.

Jan. 13, 1914.

Pacific Rural Press.
Gentlemen: I am more than glad to say that a very large percentage of the inquiries I have had in regard to stock during the past year have come from readers of the Press, and I believe it stands today one of the BEST dairy papers on the Coast.

Yours for a good year.
R. E. WATSON

OAK GROVE DAIRY FARM.
Breeder of Berkshire Hogs.

Woodland, Jan. 23, 1914.

Pacific Rural Press.
Gentlemen: I sell more high-class breeding stock through the Pacific Rural Press than through any other paper. I find it reaches the farmer and swine growers who want the best stock.

H. ARMSTRONG

Modesto, Cal., Jan. 15, 1914.
Pacific Rural Press.

Gentlemen: I have made nine out of ten of my sales through the Pacific Rural Press, and you know I have tried almost all the other papers.

Your friend,
JOHN P. DAGGS.
Breeder of Duroc-Jersey Swine.

If you have breeding stock of any kind for sale a liner in the Breeders' Directory or a display advertisement will help you sell it.
Address Advertising Department

Pacific Rural Press
420 Market Street San Francisco, Cal.

DANGEROUS

AS WELL AS PAINFUL

Backache
Lumbago
Stiff JointsNeuralgia
Rheumatism
Sprains

Gombaul's Caustic Balsam

WILL RELIEVE YOU.

It is penetrating, soothing and healing and for all Sores or Wounds, Felons, Exterior Cancers, Burns, Boils, Carbuncles and all Swellings where an outward application is required. CAUSTIC BALSAM HAS NO EQUAL. Removes the soreness—strengthens the muscles.

Price \$1.50 per bottle. Sold by druggists or sent by us express prepaid. Write for Booklet L.
The LAWRENCE-WILLIAMS CO.,
Cleveland, O.

DR. KORINEK'S REMEDIES MAKE SICK ANIMALS WELL

Write today for a FREE Sample of Dr. Korinek's Gall Powder.

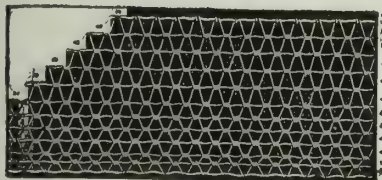
The Dr. Korinek Capsule

the most modern development in animal medicine is easily and safely given—exact dose—quick results—do not deteriorate—always on hand for emergencies. Put up as follows:

Dr. Korinek's Colic Capsules—Kidney Capsules—Fever Capsules—Diarrhoea Capsules—Worm Capsules—Tonic Capsules and Physic Capsules. Also Dr. Korinek's Gall Powder, Stock Food and Tonic, Poultry Food and Tonic, Distemper Remedy, Eye Remedy, Roup Remedy, Vermin Destroyer, Dog Remedies and Disinfectants.

For Sale in every Town or by the
KORINEK VETERINARY REMEDY CO.
MEDFORD, OREGON, U. S. A.

KOKOMO Self Regulating FENCE



STRONG Because it is made of large High Carbon Steel Wires.

DURABLE Because it is double galvanized and all wires interwoven and securely locked at each intersection.

CHEAP Because it is sold by actual weight at DIRECT FACTORY PRICES.

Write for catalogue and price list.

CALIFORNIA ANCHOR FENCE CO.

822 E. Main St.

Stockton, Cal.

IMPORTED SHIRES

We offer for sale young mares and stallions from some of the best stock in England. Ages range from 1 to 4 years. These are all good individuals, and every one is absolutely sound. We also have saddle horses and driving stock for sale.

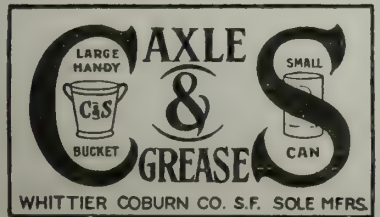
Correspondence and inspection of stock invited.

BLACK HAWK RANCH

Burlingame, Cal.

A. W. Ward, Superintendent.

Phone 131.



WHITTIER COBURN CO. S.F. SOLE MFRS.

The Average Dairyman's Barn.

(Continued from Page 161.)

building by having it run out onto a trestle. The liquid manure is disposed of through gutters and on out to the field in a cement trough.

Whether this type, or some other is decided upon, there are a few points that might be called fundamental, in erecting dairy building, and which, if followed, will be pretty certain to give good results. In brief these are: good light and ventilation, cement floors with good drainage, both inside and outside of the building, as few projections or unnecessary dirt catchers as possible, and lastly so arranged that as only a minimum amount of labor will be necessary in the performance of the work.

In the past there has been a great deal said and printed about the extreme methods, that are used on some dairies, in connection with sanitary buildings, regarding the germ content of the milk. Very likely many of these practices will be discarded in the future, as experiments carried out at some of our agricultural colleges do not seem to confirm the belief that all of them are warranted.

An interesting publication on such experiments was recently issued, by the New York Experimental Station, in which was set forth a few of the points which had been supposed to greatly influence the bacterial count.

Those that were found to be of no value were: celling the stable with lath and cement, white washing the interior, and painting the woodwork, while clipping the udder flank and adjoining portions of the cow led to a slight increase in the germ content of the milk when the cow was cleaned by hand.

The important fact, which is being gradually recognized, is that the production of a reasonably clean milk with a low germ content, will be a far simpler and less expensive undertaking when the factors that really govern its production are actually understood.

RYE BETTER THAN OATS IN LASSEN COUNTY.

To the Editor: I have just read your answer to the questions of R. K. in the issue of January 17, and thought that I would answer it as you are not familiar with this section of the state, as I can see by your reply to him.

Rye is alright, on sandy soils, and if it won't make a crop there is nothing that will, but as to oats, he will only throw away his seed and labor, and will get nothing, as that class of land will not grow anything but rye and make a success of it. As to vetch, as far as my experience goes it will not pay, unless you have better quality of land to sow it on. He might raise a fair crop of wheat, in a wet year like this, if he could have had it sown early last fall, but it is not worth while if sown in the spring, and his rye if sown last fall, would have been much better, 50% at least.

Now if R. K. is a city chap and is expecting to camp, in San Francisco, until late next spring, before he comes to put in a crop, he had better wait until next fall, but he should get his land ready this spring.

I know this whole country, every inch of it, and having lived here and farmed since 1861, I know just what I am telling you. As to humus, if he ex-

pects to increase that to help alfalfa the third year he had better plow in a crop or two of rye when about four to six inches high, but he must plant the crop in the fall if you want a crop that will pay to harvest, on that kind of land. He can cut before it ripens if sown, and then it will come up from the stools and make a seed crop in a good year.

AS TO ALFALFA.—Now if C. P. G., of Turlock, will take my advice he will let the Peruvian or Chilean alfalfa alone. It is all a hoax and a scheme to beat farmers out of their hard earned cash. I tried the so-called Turkestan alfalfa and also the Dry Land alfalfa, a few years ago, on a small scale, also at the same time, on the same piece of land, I planted some home grown seed and the home grown beat the new kinds at least 50% in both stand and growth. If C. P. G. will get some good guaranteed seed, home grown, or better if he could get some grown at an elevation of 4000 or 5000 feet, he will not find any fault with his crop, if he has good land and water for it.

Your advice to F. A. P. about hogging barley in an orchard is just right.
G. R. WALES.

Milford, Lassen county.
[Mr. Wales is a good old friend of ours. He has taken the *Rural Press* since it was first discovered and he would rather make a mistake himself than allow us to make one. He has corrected us for which we are thankful and now we are going to turn about. He is undoubtedly right about Turkestan alfalfa and about the advantage of seed grown at his elevation. Alfalfa seed grown in Nevada is of the same character. But Mr. Wales should not denounce all new alfalfas because Turkestan went wrong. The Chilean alfalfa is our common alfalfa. The Peruvian is another kind which shows signs of being good and should be given wider trial, though the common alfalfa, which is known to be good, should be chiefly sown.—EDITOR.]

EXPERIENCE WITH PERUVIAN ALFALFA.

To the Editor: I note the enquiry of C. P. G. regarding Peruvian alfalfa. In the Hughson district four and a half miles north of Turlock I sowed one acre of this alfalfa, getting about three-quarters of a stand which I cut three times, the last on the 17th of November. It freshened up and has been growing all winter and is now ahead of any in this vicinity and averages about ten inches high.

I think the size of the stalk depends upon the thickness of the stalk. On the 26th of November I spring toothed this piece each way, sowed 135 pounds of superphosphate and about 10 pounds of alfalfa seed which was just nicely coming through the ground when we had a week of frosts which did not seem to hurt it and it is now growing nicely with the third leaf.

As to how much faster it will grow in summer time, only time will tell but I think the University claims that it yields 20% more than other varieties. I am now about ready to sow another small piece.—F. D. KEENEY, Turlock.

[This is right to the point. We hope to hear from other experimenters with all the newer kinds of alfalfa.—EDITOR.]

PROFESSIONAL DIRECTORY

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CIVIL AND AGRICULTURAL ENGINEERS

Subdivisions, Surveys, Irrigation Investigations, Lateral and Drainage Locations, Land Leveling and Checking Plans and Specifications, Supervision of Contractors, Agricultural Reports and Farm Development. Special attention to Rice and Alfalfa Lands.

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SOIL UTILIZATION

Field and Laboratory Examination of Agricultural Soils and Farm Lands.

Thirteen years' experience with the U. S. Dept. of Agriculture as Soil and Alkali Expert.

CLARENCE W. DORSEY

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Specializes on IRRIGATION, DRAINAGE, RECLAMATION. Agricultural Investigations as to Soils, property values, etc. Speaks Spanish.

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Agricultural Investigations, Drainage, Legal Engineering and Water Right Reports, Alkali and Marsh Land Reclamation, Appraisal of Irrigation Systems, Management and Development of Lands, Ranches and Irrigation Projects. Soil Surveys.

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CONSULTING ENGINEERS AND AGRICULTURISTS

Hearst Building, San Francisco. Irrigation and Drainage, Land Examinations, Agricultural Developments, Farm Improvements and Management, and Soil Surveys.

Beet Seed, Sugar Beet Culture, and the location of Beet Sugar Factories a specialty.

SOIL LABORATORY

Analysis of Soils for Plant Food Values and Alkalies, Agricultural and Industrial Products, Water, Insecticides, etc.

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Established 1878.

AGRICULTURAL AND INDUSTRIAL CHEMISTS

108 Front Street, San Francisco

JAMES H. LEGGETT,

OROVILLE, CAL.,

Horticultural Engineer and Land Expert.

Examination of Lands. Adaptation of Crops to Soil and Climate. Forty years' practical experience in foothills and valleys of northern California with the Orange, Olive, Fig and Vine.

EATON LABORATORIES

444 Market St. San Francisco

Chemical and Bacteriological Analyses, Soils, Waters, Feeds, Dairy Products

Save Money On What!

Second Hand Pipe

By buying at the

ALEXANDER PIPE CO., Inc.

256 North Point St., San Francisco, Cal.



REDWOOD TANKS

I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

R. F. WILSON, Stockton, California.

VETERINARY QUESTIONS AND ANSWERS.

[By Dr. CHAS. C. WING, San Francisco
Veterinary College.]

FOR A HORSE THAT WILL NOT DRINK.

To the Editor: I have a horse, probably 15 years, apparently in good health, that has stopped drinking. He has not taken a swallow of water for over three weeks, although I offer it to him twice a day. He drank very little for several weeks before stopping altogether. He is not working, but during the recent bad weather has been standing in the stable. I am feeding him principally corn fodder, a little kafir corn and some pumpkins that I will lose if I don't dispose of them some way. He was on pasture all summer and fall and has done almost no work since last spring, and very little then. I haven't given him any salt until yesterday, when I gave him a little, but he still refuses to drink. What is the matter and what can I do for him?—S. L. Elliott, Sacramento Valley.

The animal will drink if you change the feed or probably if you can get the horse to eat some dry bran with about 2 tablespoonfuls of salt in each feed three times daily. Give following:

Soda chloride, 6 ounces.

Soda bicarbonate, 4 ounces.

Sulphate of iron, 4 ounces.

Tablespoonful in feed three times daily.

SKILLFUL DENTIST NEEDED.

To the Editor: We are deprived by wet weather and the bad condition in the northern part of this county of the services of a veterinary. We generally have to import one from Napa or let the stock get well as best they can in acute cases, and either one is costly. We have two or three work horses whose teeth are getting long and need attention. I would like to get a bit, floats, and maybe forceps. Would you advise me what I need? One of my neighbors is a home-made veterinary and between us I think we can do the work.—W. B., Pope Valley.

I would advise you that fixing the teeth of horses is something that should be done by an experienced man, as a great deal of harm can be brought about by injuring the mouth. To say nothing of the injury you can do the teeth themselves, such as cracking them or otherwise injuring them. If the expense of calling a veterinarian is too great for that work, why don't you lead or drive the horses to the nearest qualified man and have him do the work at his place of business? The necessary instruments cost about \$75 for a complete set.

WHAT AN AUTHENTICATED TEST MEANS.

The question often arises as to what an official test amounts to and whether they are thoroughly reliable or not. For that reason it may be interesting to give the methods in use, for authenticated tests, as recognized by the American Jersey Cattle Club.

Year's tests of registered Jersey cows must be authenticated by testing for its fat content a sample of the milk of every milking during two consecutive days, or forty-eight hours, in each calendar month, or in each period of thirty or thirty-one days,

without regarding the calendar divisions.

This authentication must be made by a supervisor appointed by, or approved by, a state agricultural college or experiment station.

The owner is required to weigh the milk of every milking, set same down on a form furnished gratis by the club, and to mail this report to the club office each month.

The owner must each month pay the bills for test supervision received from the station sending the test supervisor.

A cow two years old or under the day the test is started must produce 250.5 pounds fat in the year, and for each day a cow is over two years at the start of her test she must produce one-tenth of a pound of fat additional for each such day, until the age of five years at start of test, when the required amount is 360 pounds, and this is the amount of fat for all cows five years old or over.

Year's tests may cover a single lactation period, or parts of two lactation periods, but is restricted to a record covering 365 consecutive days.

In the case of tests for seven days the milk of every milking must be tested by the supervisor, and such tests must not begin until at least

twenty-one days after the cow has freshened.

Cows having accepted tests are eligible to the Register of Merit in one of three classes:

In Class AA if cow has carried a calf for at least 155 days during a test period of one year.

In Class A if she has an accepted year's test, but does not qualify for Class AA.

In Class B if she has an accepted test for a period of seven days.

A bull is eligible to the Register of Merit after three of his daughters out of as many different dams have been entered therein on year's tests.

More complete test rules may be had by addressing the American Jersey

Auction of Percherons

MY FINE LOT OF REGISTERED MARES AND STALLIONS
TO BE KNOCKED DOWN TO HIGHEST BIDDER AT

Selma, Fresno County, Feb. 14

I am badly overstocked at my farm at Los Molinos, Cal., and must dispose of surplus regardless of price. A better lot of Percherons were never offered in California; both imported and home bred.

Carload to Choose From

Seven mares that will foal coming spring; high-class stallions ready for service. One registered Shire. Weights run 1600 to 2000 lbs; ages 1 to 8 years. All in fine condition—not overfat. Every horse in the lot a breedy animal. All acclimated. This is the first time high-grade registered Percherons have ever been offered at auction in California. It's your chance to buy cheap. Send for breeder's list at Selma, Cal.

E. S. PORTER, Prop.
A. L. MILNER, Auctioneer

Mammoth Consignment Sale of Registered Jerseys by California Breeders

At PUBLIC AUCTION on APRIL 2, 1914

On G. O. Hillier Jersey Farm, MODESTO, CAL.

96 Head—70 FEMALES—Many REGISTER OF MERIT COWS with remarkable records. 3 Phenomenal Bulls. All stock sold under a WRITTEN GUARANTEE of soundness, etc. For Catalog and particulars, apply

G. O. HILLIER, Sales Manager, Modesto, Cal.

B. A. RHOADES Auctioneer, Los Angeles, Cal.
Assisted by J. H. CORLEY, Modesto, Cal.

REGISTERED JACKS

12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

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Residence, 508 N. Dooty St.
Phone 471-J.

Cattle Club, 324 W. 23d St., New York, N. Y.

AGRICULTURAL REVIEW.

(Continued From Page 175.)

stock committee and an agricultural committee, the duty of which will be to work among the farmers to induce them to produce for exhibit purposes the best they can, and to afterward enter it at the fair.

A petition has been presented to the Board of Supervisors of San Joaquin county asking that part of the Exposition tax appropriation be set aside for the rehabilitating of the old-time county fair for that county.

At the annual meeting of the Tulare County Beekeepers' Association it was decided to secure samples of every grade of honey produced in that county and to exhibit them at every fair this season and at both expositions next year.

Complete Plans for Irrigation.

The South San Joaquin County Irrigation District has perfected plans for the thorough distribution of water to the land owners of the district. Two thousand headgates are being installed and canals and laterals will bring the water to every 40 acres this season. This irrigation district will soon have probably the most up-to-date system now in operation in the State.

Secretary Lane has allotted the sum of \$255,700 to be expended in work

on the Orland project, Glenn county. In addition, the sum of \$175,219 is allotted for drainage work on the Klamath project in Oregon. Mr. Lane has also allotted \$10,000 for general investigation of irrigation in California.

According to the irrigation investigation of the Department of Agriculture, there are now more than 2400 acres of grain being irrigated in the territory immediately contiguous to Woodland, most of which is barley. One of the most scientifically irrigated tracts is 500 acres in extent. Three hundred acres are irrigated from a ditch and the remainder from pumping plants.

New Forestry Department.

Professor Walter Mulford, former head of Cornell's forestry department, has accepted the appointment as head of the new department of forestry in the University of California. His resignation as head of the forestry department at Cornell will take effect at the end of the present college year, and he will begin his duties at Berkeley August 1st. Professor Mulford is a graduate in both agriculture (1889) and forestry (1901). He was appointed to his professorship here in 1910, when he was a member of the faculty of the University of Michigan.

Another Tract to Be Opened.

The Marysville Appeal says that the 840-acre tract in Linda township, known as the Toland and Lazier places, has been sold to Portland par-

What Does a Silo Cost?

Experienced dairy farmers claim that a good silo will pay for itself the first year. That being the case it costs nothing.

As a matter of fact, if you are keeping dairy cows or raising stock for the market, there is no investment which you could make that will pay you better returns than an



Ideal Green Feed Silo

The cost is a secondary consideration and it is not a question of whether you can afford to erect a silo this year, but rather whether you can afford to be without one another season.

Order an Ideal Green Feed Silo now and get it erected in time to save your first cutting of alfalfa.

Write for Catalog B for full information.

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DE LAVAL DAIRY SUPPLY CO.

101 Drumm St.
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1016 Western Ave.
SEATTLE

PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.



"Pretty Good Job, Isn't It?"

"Nothing much to do but view the remains. We'd have had to worry at it for days if we hadn't used dynamite. That's one big point about

Hercules Dynamite

—it's quick and its easy to clean away the stump afterwards. Its cheaper too—you don't have to board a big crew of men and horses.

"Plenty of farmers have stump land lying idle that would be worth money to them if they'd use Hercules."

Send for free booklet "Progressive Cultivation" for valuable facts concerning the use of dynamite on the farm. Address Dept. No. 5

HERCULES POWDER CO.

Chronicle Bldg.

San Francisco, Cal.

ties. The whole tract is to be cut up into small farms and offered to homeseekers. Considerable money is to be spent on the land getting it into shape for settlers.

Price Fixed for Prison Bags.

The State Board of Prison Directors has fixed a charge of 8½¢ each on the bags turned out by the San Quentin penitentiary jute mill in 1914. The entire output will be between 4,500,000 and 5,000,000 bags. The maximum available to any one buyer is fixed at 10,000 bags up to May 15th, when an inventory will be taken of the amount likely on hand and a new maximum established.

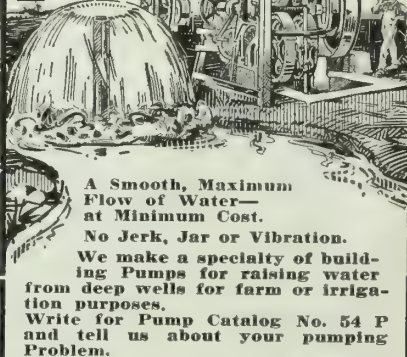
Shire Society Gives Medals.

On Thursday, January 29th, the president and several members of the State Board of Agriculture visited Napa, and at a luncheon given by the Chamber of Commerce presented Ben Blow with a gold medal and Henry Wheatley with a gold medal from the Shire Horse Society of England for the best Shire stallion of any age at the State Fair in 1913, also a silver cup from the Shire Horse Society of America for the best display of Shires at the same fair. Mr. Wheatley deserves the handsome recognition received for his good work for the Shire in California, and we are sure that every draft horse man in the State will be heartily glad to learn of this appreciation of his efforts.

Bidwell Ranch Leased.

The Bidwell ranch, near Chico, has been leased to Reuben Messinger and Fred Hamilton, of Chico, who will manage and superintend all departments of the ranch, which has long been known as the Rancho Chico, in this State.

Pomona Deep Well Pumps



A Smooth, Maximum Flow of Water—at Minimum Cost.

No Jerk, Jar or Vibration.

We make a specialty of building Pumps for raising water from deep wells for farm or irrigation purposes. Write for Pump Catalog No. 54 P and tell us about your pumping Problem.

POMONA
Manufacturing Co.
Pomona, Calif.

We also make a full line of Gates and Valves for cement pipe irrigation.



911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

AGRICULTURAL BULLETINS.

To the Editor: To whom and where should one write for information and for bulletins of the State School of Agriculture?

[Address Director, Agricultural Experiment Station, Berkeley. All publications of the agricultural work of the several outposts of the University are made by him.—EDITOR.]

Planning for the Summer's Work.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

Whether we are going to raise one or two hundred, or one or two thousand chicks, the question ought to be solved soon or the chicks will suffer. There is a little too much of the spasmodic chick raising done to make it profitable. If a person expects to raise a few hundred chicks he should take the time to think about it and plan, so that these chicks can be raised economically and well. A well raised pullet stands a much better show of being a good layer than one that has been raised, say as a second thought.

The farmer or chicken raiser has off times in winter that could and should be spent in fixing up cheap, yet comfortable accommodations for his poultry. Well made home contrivances, do just as well as the more expensive boughten articles. The idea is to see that everything is made practical and that ventilation is provided for. Some people make the mistake of closing up the small home-made fireless brooders, thinking that the chicks will be warmer, but instead of being warm, the little things breath causes them to come out of the warm coop looking like little ducklings that have been in a pond. In this condition it takes very little cold air to give them a slight cold, which, if not detected at once, may lead to roup. But if it does not go so far, it is almost certain to give the chicks a chill that will set them back, and it sometimes takes them until maturity to recover from it.

AN EVEN TEMPERATURE DESIRABLE.—It should always be borne in mind that the brooded chick differs from the chick running with hens in this way, the hen's body is just about at one temperature all the time, besides this the hen imparts a certain amount of her own vitality, with the warmth, and in artificial brooding this element is always lacking no matter how good the brooder may be. The even temperature is almost a necessity, if we want strong chicks, and this we can have by careful management, even with home-made fireless brooders, or with those brooders that have lamp heat. A handy man can make quite good, lamp-heated brooders for small flocks.

HOW TO MAKE.—A barrel, such as a vinegar or kerosene barrel makes a fine brooder box because there are no corners for the chicks to get in; saw the barrel off at say, thirteen inches from the end. You will need a key-hole saw, to saw a piece out of the center of the barrel end. This hole should be about three inches in diameter and round, this is for the lamp chimney to fit in. Nail a piece of tin, an old tomato can or quart fruit can will do. It is best to unsolder the can by putting in the fire and taking the ends out, this unsolders the side too, and reduces the diameter. Now insert this can without ends in the opening you sawed in the end, take a pair of tin cutters or an old knife and cut the tin so that it can be bent and tacked around the barrel. Make it fit by hammering down and tacking with small nails, or four ounce tacks. Next take a five-gallon oil can and cut down at each of the four corners, after removing the top, about two inches, or more if needed to make it fit on a little lower level than the

depth of the brooder. When you have it the right size cut the corners, bend the tin to fit the floor of the brooder, nail down close, after making sure that you have the can in the center. This is very important so take time to see that it is right. Make a few small holes in the can on all four sides, this gives ventilation and the air is warmed by the lamp as it comes up. Now cover your brooder with a board cover, made to fit, yet with ventilation in the form of small holes, made by a brace and bit. Put about four inches of dry sand in and provide yourself with a good safe lamp, from some incubator company, and place your brooder somewhere out of the wind and you have a good home-made brooder. The lamp can be put in a box and the box fixed in a hole in the ground, but it must have air or it won't burn, then again if the wind strikes it it will go out. A little time to experiment will give you the right idea as to fixing the lamp so that it will be perfectly safe. For very small newly hatched chicks a roll of sack around the outer edges conserves the heat, but once the sand gets well warmed the chicks will be comfortable the coldest night. I have raised hundreds of chicks in these little home-made brooders and very rarely lost any.

A good home-made fireless brooder can be made with the other end of the barrel. Saw out one stave at each side, that is on opposite sides of the barrel, about half way up, tack window screen over the holes, which should be about three inches square, this is for ventilation so should not be low enough to strike the chicks. Tack gunny sacks around the outer edge of the barrel, put about six inches of short cut clover or straw in for a bed, now make a lid to fit the top and quilt some feathers in nice soft cheese cloth, tack this on to your lid and leave it slack, so that the center will just about rest on the chicks backs; now make a hole at least six inches long and three and one-half high, at the bottom of each barrel, for the chicks to run in and out of, and your brooder is just as good as if it cost several dollars. If the weather is cold and you don't have very many chicks, fold a gunny sack and lay in the bottom on the floor, then put your cut straw on top of that and make a nice round nest for the chicks. After they have been in the brooder a few hours put your hand in and feel how nice and warm they are. At first it is best to close the entrance at night, as they will get plenty of air through the screens, but as they get older and know their way in and out leave the entrance open nights, and some feed where they can get it.

Another thing that should be done is to look up that incubator and see what it needs to make it run right. Did you have good hatches last year and if not what was the reason? This is a mighty good time to spend a few hours investigating.

If you hatch with hens it's a good time to fix up some place where the hens can be set and have quiet, for that is half the trouble with hens quitting the job. The other hens annoy them, the noise makes them so uneasy that they want to be out in it and when the hatch is about half way through, you have it left on your hands and very often no other setter

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

HATCHING EGGS AND BABY CHICKS.—Booking orders for deliveries after Jan. 10. We specialize on the white egg commercial breeds. White Leghorns, Black Minorcas. For table fowl and great winter layers our R. I. Reds and Barred Rocks. Our aim is utility, well bred, healthy stock, the kind you want for business, at prices that mean a substantial saving, based on our large output (4000 chicks weekly) and a labor-saving practical plant. Hatching eggs \$2 to \$5 hundred and chicks 7c to 15c each, depending on breed, month and quantity. Circular free. Roofden Poultry Ranch and Hatchery, R. 10, Campbell, Cal.

BABY CHICKS all sold for season! Special on eggs for February: MacFarlane strain White Leghorn, \$1.50 per 15; \$2.50 per 30; \$6.00 per 100; \$50.00 per 1000. Owen Farm and Fishel strain White Plymouth Rocks, \$2.00 per 15; \$4.00 per 30; \$10.00 per 100. MacFarlane strain White Leghorn cockerels, \$3.00 each; \$30.00 per dozen. Ten acre plant, 15,000 square feet under roof. Address Dept 2, Newton Poultry Farm, Los Gatos, Cal.

WHITE LEGHORN EGGS, large, uniform size, high fertility. Male birds direct descendants of winner of sweepstakes, Oklahoma State Fair, 1912. Females, heavy winter layers, \$6 per 100. Book at once. Brooke Farm, Sacramento, Cal.

BABY CHICKS.—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and standard qualities. \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande San Luis Obispo County, Cal.

S. C. WHITE LEGHORNS from Clover Leaf Farm, Lodi, won 4 specials and 14 firsts (19 possible) at the State Fair, Willows, Oakland and Fresno Eggs, \$6.00 per 100. Baby chicks, May 28, \$12.00 per 100. A few cockerels, \$3.00 each.

HURRAH FOR 1914.—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

FEED CROLEY'S INFANT CHICK FEED.—Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

BABY CHICKS.—Write for book, "The Day Old Chick Business." It's free. White Leghorn and Black Minorca chicks my specialty. Lasher's Hatchery, 400 Kentucky St., Petaluma, Cal.

WHITE AND BROWN LEGHORN CHICKS that will please you. Let us send circular. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

INCUBATOR CHICKS.—White, Buff and Brown Leghorns, Black Minorca and White Rock. All high class stock. Send for booklet of prices. H. S. Kirk, P. O. box 597, Sacramento, Cal.

BARRED PLYMOUTH ROCKS.—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

S. C. WHITE LEGHORNS.—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

ORPINGTONS.—Buff and White. Stock reasonable. Eggs \$3 and \$5 a setting. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

DIABLO WHITE ROCKS.—They win repeatedly. Let me quote you prices on eggs and stock. C. J. Struby, Concord, Cal.

EGGS for early hatching, from carefully mated pens. Prices reasonable. The Buff Orpingtons you want. Ernest L. Wilder, Los Gatos, Cal.

BUFF ORPINGTON eggs for hatching. Prize winners and heavy winter layers, \$1.50 per 15. W. De la Mater, Salida, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties. L. W. Clark, Petaluma.

BUFF ORPINGTON EGGS, \$3.00, \$1.50 setting. Runner Duck eggs, \$1.00. "Glendale," Fleming Ave., San Jose, Cal.

LIGHT BRAHMAS.—Breeding stock for sale. Eggs for hatching \$2.50 per setting. Box A. B., Pacific Rural Press.

S. C. WHITE LEGHORNS.—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected stock. A few selected cocks and cockerels for breeders left. C. W. Levisse, Maxwell, Colusa Co., Cal.

FREE.—66-page catalogue, describes in detail prices, etc., on 19 kinds of baby chicks, hatching eggs, incubators, brooders, etc. We ship everywhere. The Pioneer Hatchery Co., 112 E. 8th St., Los Angeles, Cal.

CHICKENS, DUCKS, GEENSE, GUINEAS.—Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

FOR SALE.—Barred Rock cockerels, \$2.00 each and up. Send for folder. G. L. Hawley, Madera, Cal.

BRONZE TURKEYS AND EGGS.—Ed Hart, Clement, Cal. Large size, good plumage, early maturity.

MAMMOTH BRONZE TURKEYS.—The best in the West. Geo. A. Smith, Corcoran, Cal.

PETALUMA BROODER STOVE.—Haywards, Cal. Best on market. Latest improvements. Catalogue free.

BROODER STOVES.—New; well known make. For sale cheap. Box 420, Pacific Rural Press.

S. C. BLACK MINORCA EGGS for hatching. A limited number. J. W. Benoit, Route 2, Modesto, Cal.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

BELGIAN HARES.—Thoroughbred Belgians, with or without pedigrees. OLD HICKORY SUPPLY CO., Dept. 3, San Francisco.

SUTHERLAND'S PERFECT BROODER

Has no equal. It supplies the chicks with fresh air. Is safe, economical and reliable. Correspondence solicited.

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THE FRESH AIR BROODER STOVE

It supplies the chicks with PURE, WARM, FRESH AIR THROUGH THE BASE. Reduces former oil bills one-half and regulates to a degree.

We manufacture brooding systems of all kinds.

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Free Book

giving a full account of hatching, raising, and caring for chickens,

with details of a Complete System of Feeding.

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You Can't Save Money When You Throw It Away on poor equipment. The best costs less in the end. The best bought of us costs no more than the inferior of others. That's the way we do business. Just write for our catalog. It will prove our statement.

Engines - Pumps - Motors
A dollar well spent is a dollar made. Be careful before buying.

Norman B. Miller Co. San Francisco, Cal.
503 MARKET STREET

in sight. In such cases it is no use blaming the hen at all because it is nearly always the caretakers' fault instead of the hens.

Any handy man can make a box that will hold a dozen hens and each one separate, then, if there is no building, they can be put in, the box can be made rain proof and set out in the orchard under the trees. One small wire yard can be set up, to the entrance of two boxes, and those two hens can be fed and returned to their nests and the yard removed to others until all are fed.

CHEAP TURKEY COOP.—One of our readers asks for an idea of a cheap turkey coop. It is too bad that you did not say what the coop was wanted for, but we will suppose that it is wanted for breeding turkeys.

In a climate like Merced, you don't need much coop about it. All I would do would be to make a high wire coop, the higher the better, if you have much wind put a board back in and a roof. Set the coop so that the general run of wind storms will strike the back. Make it long enough so that each turkey has at least fourteen inches of roosting space and set the roost, just as high as you possibly can from the roof, even then you may have to take the roof off for turks do not like to be cooped up and will generally get on the roof.

MOISTURE IN INCUBATORS.

There always has been, and perhaps always will be, a great deal of difference of opinion about moisture in incubators, and as the time is about here for the year's hatching to start in full blast, it may be well to give the views of a writer in an exchange on this subject, who says: I have found very little need of artificial moisture; in fact, I never use any in the spring months. I find too much moisture makes the chicks too large, and they fail to free themselves from the shells; while too little moisture may make the chick small, it will be lively and get out of the shell more easily, but in a good cellar the atmosphere is generally moist enough. There is far more danger from lack of ventilation than from lack of moisture.

In caring for incubators it is necessary to watch them very carefully for the first week and see that the thermometer stays as near 102 degrees as possible; for, if your eggs get overheated or underheated the first week, you will have a very unsatisfactory hatch, and you will have trouble rearing your chicks. I like to have my machine run at 102 for the first five days, get to 103 by the seventh day, and from 103 to 105 for the rest of the incubation period, which is 21 days. This gives me the best results. If your incubator runs too low, your chickens will be crippled; they will have crooked toes, cross-bills, and other deformities; your hatch will be prolonged for several days. On the other hand, if your machine runs too high, your eggs will be overheated; this hardens the yolk and prevents its proper absorption, and your chicks will die in spite of all you can do.

VERMIN IN THE POULTRY-HOUSE.

Keeping the poultry quarters clean of vermin is one of the main things in profitable poultry raising, and the wise poultry raiser keeps a sharp look-

out at all times for such things all of the time, or perhaps we should say, never stops work long enough to allow them to get a start, for an ounce of prevention is worth a good many pounds of cure in the poultry business.

Among other duties that should be attended to is the dust bath; this is more effective if a little sulphur is mixed in the dust. The houses and roosts should be examined occasionally, and if vermin are found, a good plan is to spray or syringe them with kerosene emulsion, made as follows:

Boil 1 gallon of soft water and dissolve in it 8 ounces of soft soap, take off the fire and add slowly 1 gallon of kerosene, stir briskly for ten minutes or more until the oil is thoroughly incorporated with the soap water and appears like thick cream, then add slowly, stirring all the time, 10 gallons of soft water (hard will not do). A small quantity of carbolic acid may be added, to make the emulsion a disinfectant, if desired.

If the trouble is very bad, two or even three sprayings may be necessary, at intervals of two or three days between each. This is also very effective against fowl tick, and poultry keepers in infected districts would be well advised to persevere with this treatment, and use wood-preserving oil to paint the perches.

TO REMOVE BODY-LICE.

To the Editor: Can you tell me how to rid chickens of body lice?—Subscriber, Bolinas.

[To remove body lice from chickens a good application of "lice powder" followed with another dose a week or so after and painting the roosts with a cheap grade distillate to which is added a small quantity of carbolic acid. If your chickens are troubled with red mites, the latter remedy will be found an effective method of keeping the houses clear of them. Any poultry supply dealer will supply the powder.—EDITOR.]

THOSE CHINESE EGGS.

A dispatch from Santa Rosa says that the Sonoma County Poultry Producers' association has decided to appeal to the public, declaring that the "Shanghai berries" are not fit for consumption. The Chinese hen is declared to be a scavenger, while the Sonoma county fowl is fed on clean food.

It is said more than 14,000,000 eggs from China are on their way to San Francisco, and it is feared this consignment will wreck the market. Recent shipments sold at 14 cents a dozen when Sebastopol eggs were nearly 60 cents.

THE BERKELEY BIRDS.

Director Joseph Grinnell of the University Museum of Vertebrate Zoology has published a list of 97 species of birds which visit the campus of the University in Berkeley during the year. Of these, 14 species are transients, 29 winter visitors and 33 are permanent residents and they constitute a permanent population of about 8000 birds on the 520 acres of University property. All the birds whose presence has been noted are named and very interesting notes made of their habits and conduct. It is a charming sketch which all observers of birds will thoroughly enjoy.

Rattlesnakes infesting a country

The Layne & Bowler System

Puts an End to Experimentation Because of Its

PRACTICABILITY

The Layne & Bowler System has met the many requirements of the western irrigator and has proven its practicability time and time again.

EFFICIENCY

The highest efficiency has been attained after 8 years of perfecting. Where this System is installed, experimentation ceases and your troublesome irrigating problems solved.

SAND ELIMINATION

The Layne & Bowler Patent Oil and Water Well Screen will positively eliminate your sand trouble. It cannot clog or choke.

DURABILITY

Nothing is slighted in the construction of these pumps. They are well housed and compact, to withstand the wear and strain they are subjected to.

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The dangerous well pit is eliminated, all adjusting is done on top of the ground and as few working parts as possible are used.

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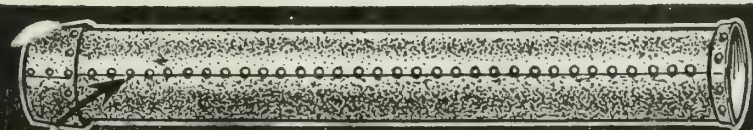
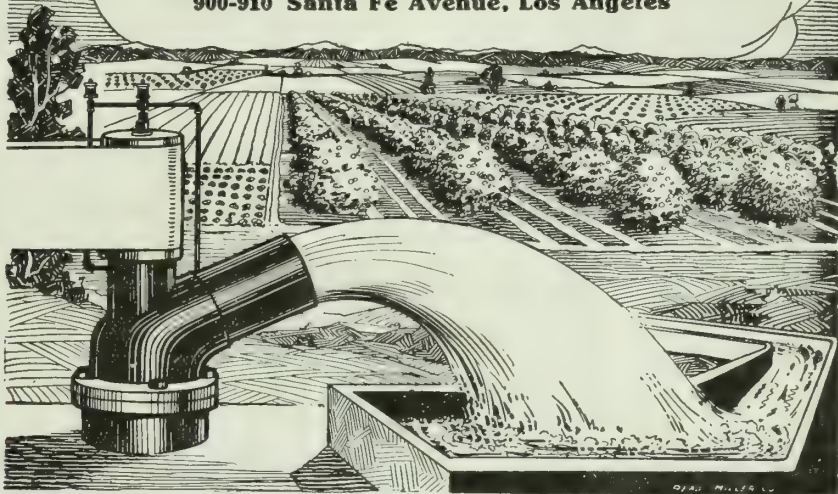
Built for your particular needs—getting maximum production at minimum cost—ending your pumping difficulties—The Layne & Bowler System gives the greatest satisfaction possible.

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No Sections. Solid Lengths of 10 ft. 6 in. Surface irrigation pipe is the strongest made. It is riveted instead of lock-seamed. We make Riveted Pipe and Riveted Well Casing, Steel Tanks, Irrigation Supplies.

Write for Literature

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See Those Rivets Mr. Farmer?

where road work is being done constitute an "industrial hazard," and a workman bitten by a snake is entitled to compensation from the State industrial insurance fund, according to a ruling contained in the report of the State Industrial Insurance Commission of the State of Washington. In the case of the snake-bitten workman, the Commission held that since the country was inhabited by snakes their presence constituted one of the hazards of the occupation of road building and granted a claim for injury benefit.

One Man can run it.

BIG MONEY in the OFF SEASON

There's a big demand for Irrigation wells throughout California and the Southwest. You can Make Big Money during your spare time with the

IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE

Bores a 100 foot well in 10 hours. Will go through gravel, sand or clay; drills through rock. One team takes it over any road. Operated by same team, or by gas engine if preferred. No tower or staking; rotates its own drill. FIVE Catalog; Easy Terms.

Lisle Mfg. Co.
Dept. 3,
625 Third St.,
San Francisco Cal.

The Home Circle.

"Hanner."

The summer of 1895 found me in a little village among the Ossipee hills. There I met Hannah.

I shall never forget Hannah's face. Trouble had left its indelible mark on it, yet it was full of peculiar peace and happiness.

Could I ever paint that expression! It became my dream, and that I might gain all possible help, I resolved to learn her history.

I felt sure the old stage driver could answer my questions about her, so riding home with him from a distant village one evening, I opened the subject.

"Dow," said I, "I met a woman today, while I was rambling about, with such an uncommon face; I'd like to paint it."

"Aye!" said he, with a smile. "I know; it's Hanner!"

"Then, perhaps, you can tell me how she came by that look," I said.

"Wall, George," answered Dow. "Hanner's story can't be told ter every kin' er ears; but I reckon ez you ken hear it in the right spirit, an' git some good from it."

"There's tew plecters in her face. Yer look at it in one way, an' yer see how sorrer had liked to er spiled it; an' then, all ter onct, yer kin see the love that brightens of it up, an' arter yer've sighted that, yer never think er t'other look agin."

"It's kin'er queer," he continued, "that jist as I start on this story we sh'd happen ter be in the only spot I know of, on this ere road, where yer ken see Hanner's shanty."

"Look up the mountain there—no, a leetle more to the right—can ye ketch sight of a road leadin' up the hill? Wall, I dunno ez it's strange ye can't, fur the trees dew beat all this summer, so thick an' leafy. But foller that old cart-road up a goodish bit, windin' an' twistin', an' all ter onct yer cum to a kin' of clearin', an' there's the little old house."

"Is that where Hannash lives?" I asked, in surprise. "She don't look as if she could rough it in such a place as that."

"Oh, no! Hanner nowadays lives down t'other side the bridge, jist over inter Shirley," was Dow's answer.

"But the time I'm tellin' on, she lived up there alone with Allene—as purty a leetle posy ez ever bloomed in these parts."

"But I s'pose I'd ought ter go back somethin' like twenty year—yes, I guess 'twuz jist 'bout twenty years ago that Hanner come home from boardin' schule down ter Portland. She can't be mor'n forty, or trifle over now."

"What!" exclaimed I.

"No," answered Dow. "Not much over forty. Yer see, Hanner's hed a purty tough experience on't, and its aged her."

"I don't s'pose she'd ever ha' gone down ter Portland, only her ma hed a great ambition for her. Her pa wuz a good-meanin' kin' of a man, but merciful sakes, the way he let the purty farm his father left him run all ter shucks wuz a pity! He never could stan' alone."

"His father kep' him a-rollin' whilst he lived, an' then Hanner's ma took a-holt on him; but all ter onct he fell over on his side, an' nobody couldn't help him then. Only the Almighty

could start him goin' agin' an' he didn't seem ter think ez 'twuz worth while.

"That happened when Hanner wuz down ter Portland. She jist come home ter the fun'el, an', then she was sent off agin to finish up her schulin.' She gradooated at last, very honerary; but she hadn't much mor'n gut settled before her ma up an' died."

"That made it bad fur Hanner—poor child—with no 'sperence nor nuthin'. But she kep' wonderful chirky, an' soon I diskivered she'd found someun down ter Portland ter look out fur her."

"Up ter see her comes a man, consid'ble older'n her; but I knew, by the way he looked 't her, an' by the way she looked 't him, they sot heaps by each other. So arter her ma wuz laid away, Hanner 'n' this man they steps roun' ter the minister's an' gut married."

"That night she stops me ez I wuz a-passin', an' calls me in, an' interdooces me to him. He told me ez he wuz mate on a vessel. His face wuz good an' kin', an' his manners wholesome. I liked him fust time I sot eyes on him. He hed a sort er protectin' way 'bout him, sech ez wimmen take ter."

"Hanner," sez I, 'yer know I'd a-married yer myself ef yer'd only said the word. 'Taint enny er my fault.'

"No, Dow," she sez, sof'ly, kin'er blushin'.

"Wall, then," sez I, 'this man here ez yer've ben an' married knows I mus' be int'rested in yer, and that I'm glad ter see yer've gut someun to look arter yer.'

"All t'onct she busts out a-sobbin' ez ef her heart ud break."

"I'm glad enough I've gut him, tew," she sez. 'But, oh, Dow, he's gut ter leave me! His ship sails in a fortnight.'

"That kin'er staggered me, I tell yer, but I give her what leetle comfort I wuz able, and I promised Allen—that's her man—ez I'd look arter her all I could."

"Hanner'n' I've been lookin' over the papers," sez he, 'an' we fin' the farm's mortgaged clean up to its val'y; but the mortgage ain't due fur a year, an' 'fore that time I'll be back ter pay for't, an' Hanner'n' me'll settle down comfort'ble fur life.'

"She tried ter smile, but 'twuz er dretful sad kin' er a smile."

"Wall, Allen worked might-an'-mainful up ter the time er goin', ter leave everythin' 'bout the house 'shipshape,' ez he said. I didn't see the partin' er them poor creeturs. Yer'd better believe ez I kept clear er Hanner's house that day!

"But arter a while I gut ter steppin' roun' ter split her wood, an' dew enny leetle chores I could. Hanner chirked up bit by bit, an' arter her leetle gal come, yer never see a creetur so happy."

"Allen'll be home soon," she kep' a-sayin'. She sez it a hundred times ter me ef she says it onct. Nothin' else seemed ter be in her min'. an' she told me ez she dramed of him continuoal; all sorts er pleasin' fancies and notions come ter her by night."

"When 'twuz mos' time for the ship ter be home, she acted more like a bobolink, crazed with thoughts er spring, than ennythin' I could think on."

"She sung all the blessed while, a-tendin' Allene, or a-doin' her house-work. Yer see, she kin'er womanized

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her man's name, an' give it to her baby in the shape er Allene. Wall, I mus' say ez Hanner's joy kin'er frightened me. 'Twuz onnateral. But I wuzn't prepared no ways fur that white face, when I stepped in, one mornin'.

"I've hed a dretful dream, Dow," she sez ter me, with her hands clenched tight together. "Do you think, Dow, ez dreams come true?"

"An' then she went on ter tell me ez how she dramt she saw the Dolphin come sailin' up the harbor, all rigged in black, an' when she arst 'em who wuz dead they told her ez how 'twuz the mate."

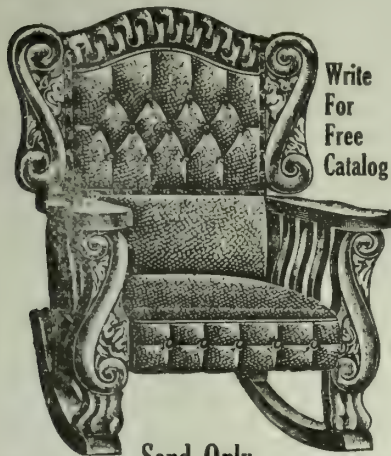
"Hanner," sez I, 'git it outer yer head jist ez quick ez ever yer kin, an' think er them pleasant ideas yer told me of onct.'

"I'll try, Dow," she said, but the smiles didn't play roun' her mouth no more, an' the bobolink's song wuzn't heard again."

"That dream ha'nted her so, at last I lost heart, tew, an' it didn't s'prise neither of us when the Dolphin didn't come back on time, nor, at the last, when the owners writ Hanner ez how they'd gave up the ship fur lost."

"Jest at that time, to add to her trouble, the mortgage fell due. Ef

I'd a had the money, I'd ha' offered it ter Hanner, but I doubt she wouldn't ha' took it anyhow. So she hed ter leave the house where she'd lived all



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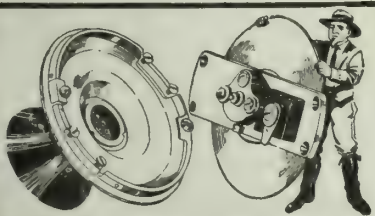
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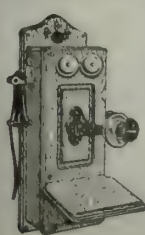
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her life, an' there wuz no place she could call hern but the leetle shanty I told ye of up the mounting. That wuz tew mis'able an affair fur ennybody to begrutch her.

"I tried my bes' tew hev Hanner come ter live ter our house, but nothin' nor nobody couldn't prevail on her. So we all set to an' boarded an' plastered the shanty, an' gut it purty comfortable, considerin', an' Hanner an' the leetle gal begun to housekeep there.

"In the summer time she got along fust-rate. I fixed her garding fur her, an' nobody roun' hed sech good luck ez Hanner on her sunny leetle slope. It didn't cost her nothin' ter git it ter market, for enny of the neighbors wuz glad ter take it ter Stamford fur her; so she made 'bout 'nough in summer ter keep her an' Allene through the winter."

"And could she live up there through all the cold weather?" I asked.

"E'enamost; all but jist a few weeks in the wust on't. Then she'd come down an' sew round 'mongst folks ter pay fur her board, fur Hanner wouldn't be beholden ter nobody.

"Waal, this kin'er work went on fur nigh 'bout ten year. Meanwhile I'd been stagin' it reg'lar.

"One day I brought up from Stamford only one passenger. He mentioned ez he didn't feel very well when he fust gut inter the stage, an' he didn't grow no better ez we come 'long. Fust he'd be cold, an' then he'd be burnin' up with fever. He breathed hard an' quick an' kep' moanin' with the pain in his head.

"Waal, yer may b'lieve, now, ez I did some powerful thinkin' durin' them three hours. We'd heard in our village ez how the small pox wuz a-ragin' in New York an' Bosting, till everybody up our way wuz sca't to hear the subject named. Before I gut home I'd made up my mind ez that's what ailed my passenger. He seemed, fur the mos' part, kin'er drowsy, an' I couldn't fin' out where he wuz boun' ter, nor nothin' so I wuz in a desprit fix.

"I wouldn't ha' minded fur myself, but how wuz I ter take him home ter Olive an' the children? An' I couldn't expect nobody else ter dew what I wuz not willin' ter dew myself.

"I wuz gittin' purty nigh the village, 'bout where the road turns off ter Hanner's shanty, when comin' 'long jist in the nick er time was Hanner herself. I told her my trouble; everybody tells their troubles ter Hanner—she was allers sympathizin' and comfortin', seein' so much trouble herself, yer know. An' what dew yer suppose that woman sez?

"You drive jist ez quick as yer ken up the mounting ter my house," she sez, 'an' don' tell nobody in the villag 'bout it, fur ef yer dew 'twill raise a dretful scare. I'll nuss the poor creetur, come what may.'

"But what if yer shid take in an' die, Hanner?" sez I.

"She gives me one er them smiles er hern, chock full er tears, an' then sez, very soft, lookin' up ter the blue sky: 'Do yer think ez I sh' care very much of I did, Dow?'

"Waal," sez I, 'there's Allene.'

"Fur jist 'bout half a minute she looked anxious.

"I'm willin' ter leave her with God—an' you, Dow," she sez. 'But don't let her come up the mounting, whatever yer dew.'

ried the man up in the old stage, whilst Hanner run ahead in a little foot-path ez she knowed of, never stoppin' even ter look at him. But it happened ez I gut there fust, so, knowin' there wuzn't no time to lose, I lay him on Hanner's bed, an' hollers out to her ez how I wuz a-goin' fur the doctor. She give me a nod, an' I rattled off purty good speed.

"Lord! When him an' me gut back ter the shanty, we saw a sight ez overcome our feelin' mighty quick, now I tell ye! There Hanner sot, a-holdin' er the man's han', an' a-lookin' inter his eyes, with hern a-shinin' like tew stars; an' a look on her face ez ef she'd gut square into heaven.

"Waal, I guess when she foun' out ez 'twuz Allen she'd gut ez near heaven ez ennybody ken this side er Jordan.

"I stood there all a-tremblin'; I couldn't speak a word. An' Hanner, poor child, her lips moved, but they didn't let out a soun', an' she hel' one han' tight over her heart, ez ef she wuz a-holdin' 'er herself together.

"Doctors is more used to sech sights than stage-drivers, I cal'late; ennyhow, he come tew fust. After lookin' keerful at the man a minute, he gut up, an' sez he ter Hanner:

"Hanner," sez he, 'you're the bravest woman out! There ain't no other woman ez I know on ez hez gut the grit ter dew ez you've done, an' the Almighty's blessed yer, yer dear creetur, ez yer desERVE.' But here he changed his tune, an' broke out a-larfin'.

"I can't help it," sez he, 'fur the man ain't gut the small-pox no more'n I hev!'

"Sech a load ez jumped off'n my heart, ye'd better believe! An' even Hanner! I heard her a-whisperin' 'Thank God!' But he was a mighty sick man, whether or no, an' I b'lieve nobody but Hanner could ha' brought him roun'.

"When we go over there ter-morrer er nex' day, yer jes' arst Allen ter tell yer 'bout his wreck, an' how he'd gave up all hopes er ever seein' home an' Hanner agin. He'll tell yer all 'bout it.

"He'd come home poorer'n he went away. But Hanner or no Hanner, this time the neighbors would dew ez they hed a min' ter. The man ez owned her old home only come up from Portland summers, now an' then, an' hearin' er Hanner's story, he sold it to us for mos' nothin'. I tell yer, 'twuz a great day fur us when Hanner came down from the mounting ter live 'mongst folks once more.

"Her face looked so heavenly, I couldn't think er nothin' but Moses, when he came down from the mount arter talkin' with God, an' wis' not ez his face was a shinin'. No more'd Hanner, an' the shine's never faded out. I doubt it can't be painted, my boy, but ef Hanner's willin' fur yer ter try, an' think she will be, fur she never refuses nobody nothin' you'll make yer everlastin' fortin if yer only git half that look in a picter."

I thanked Dow heartily for his story.

Hannah sat for me very readily. I painted with my whole soul in the work, and the result has made me money and a name. Yet, as the old stage driver prophesied, I have never been fully able to catch that wondrous glow in Hannah's face.—Household.

"Gentlemen of the jury," said an excited young barrister, "it will be for

you to say whether this defendant shall be allowed to come into Court with unblushing footsteps, with the cloak of hypocrisy in his mouth, and draw three bullocks out my clients's pocket with impunity."

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The possible economy in household labor and the conservation of the strength of the housewife are two important factors to be considered in the construction of a farm house. Pleasant and comfortable farm homes tend to hold families together; but the cheerless, unlovable and insanitary houses drive boys and girls to the cities. Investigation of prisons, insane asylums and houses of correction, seem to prove the fact that the sins which account for the existence of these institutions are often bred in inadequate and unhappy farm homes. So this social aspect of the problem is considerable.

The public is awakening to the fact that better farm houses are needed, and the special feature which many farm papers now issue as a "House Building Number" proves its interest to thousands of readers.

The office of Farm Management of the Department of Agriculture has now undertaken to investigate this problem systematically and to evolve, if possible, practical improvements for the benefit of the farmer's home.

Certain features are often overlooked in providing economical arrangements for the household when they might be easily provided for. One of the specialists of the office of Farm Management learned from a woman in Pennsylvania, who had broken down from overwork, that she had been carrying coal from the barn for years. When the husband was asked if there was any reason why a coal bunker could not have been provided near the cookstove and filled directly from the wagon, he answered that there was none, but that no one had ever thought of it. This one detail has been found neglected in other cases where it could have been easily remedied, if only someone had thought of it.

After economy in the construction of the building and in the house work has been attained, attention will be given to developing beauty. Simplicity in line and good proportions are meant by the use of this word beauty, and not so-called applied "ornaments." This simplicity is entirely in keeping with a general plan of economy.

Economy, however, is not a synonym for cheapness. Double strength glass may even be more economical in a tenant house than single strength, notwithstanding its greater first cost. A kitchen sink may be a paying investment although it excludes a bay window, or a fireplace, which has been the pet notion of the housewife. Screened-in kitchen porches, sleeping porches, double or triple windows and kitchen conveniences are fine economical features which even the smallest house plans may well consider. Separate dining rooms for families that generally eat in the kitchen are less important, as are "parlors." These separate rooms may have complete systems of plumbing, heating and lighting which involve additional expense. The kitchen is the most important room in the farm house.

For the average farmer, economy bars a room especially reserved for weddings and funerals. A back stairway in small houses is an unnecessary luxury. Large halls which are never

used to live in, but merely as thoroughfares, are a feature which can be dispensed with in the interest of a smaller outlay of money.

Other features that should give way to a comfortable and convenient kitchen are narrow porches, filigree work, numerous angles in walls and roof, useless doors. There should be an intelligent purpose for every cubic foot of space and for every piece of material about the building, if possible.

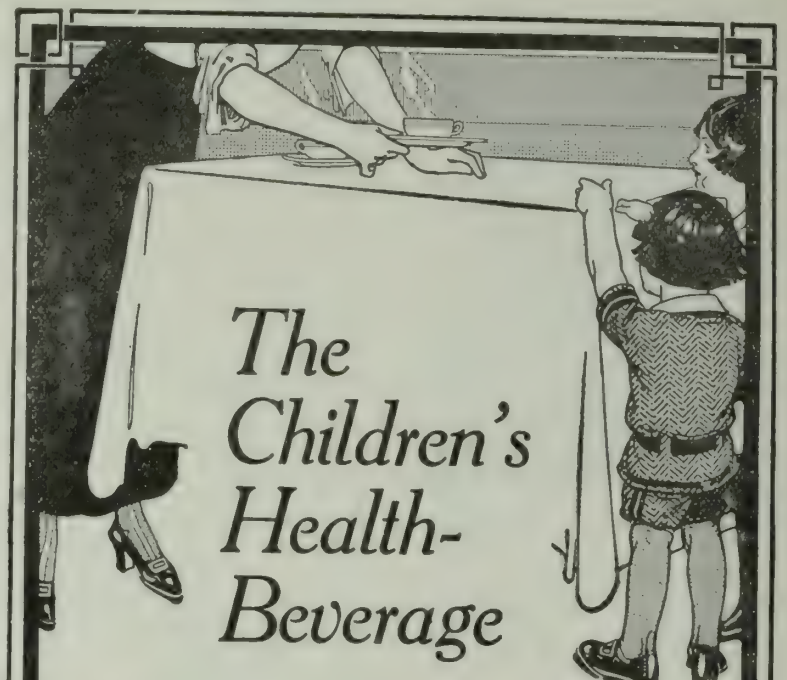
A Recipe for Cherry Wine.

Remove the stalks of the cherries and then make a pulp of the fruit without breaking the stones, working the pulp so as to free it entirely from the stones. The pulp should then be passed through a sieve. To the pulp of every 25 lb. of fruit add 5 lb. of sugar, together with 5 oz. of cream of tartar and one gallon of water. Stir the whole and make a homogeneous fluid. Place the vessel in a room where the temperature is from 65 to 70 degrees Fah., and cover same with a cloth. After about 24 hours the liquid will begin to ferment. When fermentation has subsided (which can be judged by the cessation of bubbling) the liquid should be separated from the pulp, and the former (which is now wine) is stored away in a cask and kept in a cool place. The storage vessel should be kept filled, either by adding more of the cherry wine or else good sound grape wine, red or white. The tub in which the cherry juice is placed to ferment, and the vessel in which the cherry wine is afterwards stored, should be very clean. A good way to clean them is to wash them once or twice with water in which washing soda has been dissolved in the proportion of 1 lb. of the latter to 2 gallons of water. The vessels are washed again with water, to agallon of which a wine-glassful of sulphuric acid has been added. All vessels should then be rinsed two or three times with fresh water. —M. BLUNNO.

Will Make Babies Immune to Tuberculosis.

An interesting experiment for the purpose of creating immunity against tuberculosis is being tried in Pittsburgh under the direction of the Tuberculosis League of that city. Dr. William Charles White, Medical Director of the League, says it will probably take ten years before definite results of the work will be appreciated. The experiment is being conducted on the theory that much, of not all, tuberculosis infection begins in childhood. In view of this fact, the League is aiming to supervise the growth of every baby born for the next ten years in the South Side district of Pittsburgh. The babies and their mothers will be taken in charge at the birth of the infant, and everything possible will be done to increase the resisting power of the child to disease and to make it thereby immune to tuberculosis infection. The theory of the Society is that by fortifying the body in the earliest period of a child's life, the infant will, in most cases, become immune to the diseases with which heredity and environment may threaten it.—Pacific Medical Journal.

Little Johnnie, two years old, put a piece of alum in his mouth. He ran to his mother, crying, "This candy tastes all wrinkly!"



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Our Young Folks

The Potato Babies and How They Grew.

One day last fall, when the children were at grandma's, it began to rain. Grandma always has something laid away for a rainy day. After breakfast the twins, Tommy and Daisy, got hold of grandma's two hands and led her to the cupboard. She laughed, and said she was Old Mother Hubbard going to the cupboard to get six little doggies a bone. She reached up to the top shelf and took down two boxes one large and one small.

What do think was in the large one? Little tiny potatoes. And in the small one? Burnt matches, with the end rubbed on sand paper to make a point. Grandpa had thought of the children when he dug his potatoes, and had saved all the little ones, the "pig potatoes" for them; and grandma had thought of them, too, and saved all her burnt matches.

The children gathered around her now, and watched her make a potato baby. First the head must be fastened on. This was done by sticking one end of a match into a small potato, and the other end into a larger one, for the body.

After that she stuck three matches in for legs and two for arms; and there was a man all done. Then, when she showed them how to make a horse and a cow, grandma went back to her work and left them.

They had a good time, making men and horses and cats and dogs. The rain got all through raining, the sun came out, and the grass was dry before they thought of stopping. At last the dinner-bell rang, and they laid the potato babies away for another rainy day.

Now comes the funny part of the story. The potato dollies lay quietly in their dark box for three long months, till Christmas Day. Then the children were all there again, and wanted them to play with. Grandma brought the box down, opened it, and what do you think they saw?

The potato babies had begun to grow. Their bodies were dry and shrunken. Out of every one came long white roots that looked like horns and arms and tongues and tails. The father potato had a trunk like an elephant. The fat boy had turned into some strange bird. The mamma on horseback had a real face, with nose, eyes, and a tongue coming out of her mouth, as well as long hair. The cat and camel were both turned into reindeer, and one man had two horns and a tail.

They looked so funny that they laughed and laughed till all the mammas and aunts and uncles came in to see what was the matter. Auntie May made a picture of them the very next day just they came out of the box.—Grace B. Peck, in *Our Little Ones*.

The Ginger-cake Man.

"Mollie," called her mamma from the kitchen door.

"Yes'm," answered Mollie from behind the wood-pile, where she was building bark huts for her dolls.

"Come here, dear."

This time Mollie did not answer her mother; but she said, sitting her largest doll, Miss Cynthia Bly, down so hard on a bark bench that she fell

over backwards, "I expect, if folk's mothers were little girls, they wouldn't like to be 'coming here' all the time." But Cynthia, who must have been shocked into silence by this very naughty speech, made no reply; and Mollie picked her up and seated her more gently, so that this time she was able to keep her balance.

Presently the call sounded again.

"Mollie, I want you."

"In a minute, mamma," said Mollie, fretfully.

Mollie built up the side walls of another hut, put on the roof, placed her tiniest doll, little Peg, inside, and then, rising slowly, walked toward the house, dragging one foot after the other.

Mamma was not in the kitchen, so Mollie went on to the sitting-room, and there she found her sewing by the window.

She did not look up as Mollie entered, or take any notice of her whatever as she came and stood beside her chair.

"What do you want, mamma?" she asked finally, in rather a low voice.

"Nothing, Mollie," she answered without looking at her.

"But you called me, mamma, and said that you wanted me."

"And so I did, ten or fifteen minutes ago; but I do not want you now."

Now, though Mollie had not cared what her mother wanted her for when she called her, she immediately became curious, and so she said,—

"Would you mind telling me what you wanted me for, mamma?"

"No," answered her mother, looking up at her this time. "I wanted to give you a ginger-cake man that I baked for you."

"Oh!" cried Mollie, her eyes shining, for dearly she loved ginger-cake men. It was such fun to play with them and then eat them up.

"May I have him, please, mamma?"

"No, Mollie," answered her mother: "I called you twice; and then I gave him to little Jack, who came with some parcels from the store."

"O mamma!" and, with a wail of anguish, Mollie flung herself on the floor, with her head in her mother's lap. "O mamma! mamma why didn't you tell me? I do so love a ginger-cake man!"

"Yes," said mamma, sadly, "I know you do, and that is the reason I made him for you. I did not tell you what I wanted you for, because it is right to obey instantly, and not for the sake of the ginger-cake man."

Her mother lifted Mollie into her lap, and smoothed the golden curls tenderly.

"Cynthia," said Mollie an hour later, when she had gone back to her play behind the wood-pile,— and even then there was the sound of tears in her voice,— "O Cynthia! if I had minded mamma when she called, there might have been just the very loveliest ginger-cake man leaning up against your bark bench that you ever saw!"—Tennessee Methodist.

"Behold the ruins of Pompeii!"

"Been this way long?"

"Some 1800 years."

"Bah! We had San Francisco rebuilt in less than six months."—St. Louis Times.

"Why don't you look where you're going?" shouted the cross-eyed man who had been knocked off his bicycle. "Why don't you go where you're looking?" retorted the other.

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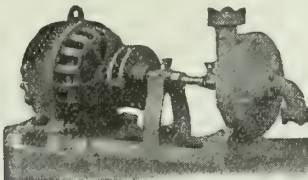
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SEND ORDERS TO THE

Pacific Rural Press, San Francisco

THE MARKETS

San Francisco, Feb. 4, 1914.

Cereals.

WHEAT.

Considerable wheat has been arriving from the north, and with a larger demand the local market reflects the firmer conditions elsewhere. Quite a sharp advance has been made in Northern and California Club, Red and Forty-fold varieties, and the new figures are firmly held.

California Club, ctl....	\$1.57 1/2 @ 1.60
Forty-fold	1.60 @ 1.62 1/2
Northern Club	1.57 1/2 @ 1.60
Northern Bluestem ...	1.70 @ 1.75
Northern Red	1.60 @ 1.65

BARLEY.

There has been no trading in shipping and brewing grades for some time and it is impossible to give any definite quotations. There is a little call for feed, but offerings are excessive and the market is weak at a considerable decline from last week's figures.

Brewing and Shipping. Nominal	
Choice Feed, per ctl....	\$1.20 @ 1.25
Common Feed	1.15 @ 1.20

OATS.

Black oats are cleaned up, and red seed are scarce, keeping prices about at the old level, though there is little demand. Feed grades are getting little attention, and efforts to sell have brought a drop in prices.

Red Feed	\$1.55 @ 1.65
Seed	2.00 @ 2.10
Gray	Nominal
White	1.35 @ 1.40
Black Seed	Nominal

CORN.

California Yellow is still out of the market, and Eastern, which is offered freely at primary markets, is lower. Egyptian and Milo are in ample supply, but prices have recovered a little from last week's drop.

California Yellow	Nominal
Eastern Yellow	\$1.77 1/2 @ 1.82 1/2
Eastern White	Nominal
Egyptian	1.75 @ 1.85
Milo Maize	1.75 @ 1.80

RYE.

Stock fit for seed is very scarce, and while there is little demand at present, the best of it is held at an advance. Ordinary offerings receive little attention.

Rye, per ctl....	\$1.45 @ 1.50
Seed	1.65 @ 1.75

BEANS.

The only new development in the bean market this week is an advance in limas, following a stiffening at primary shipping points. This variety has been stationary for some time, but buying has been resumed by outside markets, which are running short of stock, and the advance is fully warranted by the limited supply left on the Coast. Other descriptions in general remain firm, with a gradually increasing demand, and the moderate supplies in the State are for the most part rather closely held.

(On wharf.)

Bavos, per ctl....	\$5.00 @ 5.15
Blackeyes	4.25 @ 4.35
Cranberry Beans	4.00 @ 4.25
Horse Beans	1.90 @ 2.15
Small Whites	4.75 @ 5.00
Large Whites	3.50 @ 3.60
Limas	5.10 @ 5.20
Pea	Nominal
Pink	3.00 @ 3.25
Red Kidneys	5.00 @ 5.15
Mexican Red	4.00 @ 4.15

SEEDS.

There has been a little more demand during the last week, but the movement is by no means active as yet. Values are unchanged.

Alfalfa	12 1/2 @ 15 0
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3 3/4 c
Canary	7 @ 7 1/2 c
Hemp	2 1/2 @ 3 c
Millet	2 1/2 @ 2 3/4 c
Timothy	7 1/2 @ 8 c
Yellow Mustard	Nominal

FLOUR.

Prices have not changed for some time, but in view of the gradual advance in wheat the northern millmen

are beginning to talk of an advance, and there is a prospect of some revision of prices before long.

Cal. Family Extras ...	\$5.60 @ 6.00
Bakers' Extras	4.65 @ 5.20
Superfine	3.90 @ 4 1/2
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals continue larger than for the early part of January, as holders in the country are better able to get their stock to the railroads, and with the prospect of a large crop are becoming anxious to dispose of their reserve supplies. The local market, however, has taken care of the increased supplies fairly well, though prices are comparatively low. While conditions are certainly not encouraging in regard to prices, there is little doubt that local buyers who have about cleaned up the hay purchased last year are endeavoring to get prices lower than conditions warrant, and have so far been buying on a small scale. Dealers state that there is a large amount being offered at low prices in many parts of the State. Alfalfa is also cheap, with liberal offerings, but choice lots are being sold somewhat above last week's quotations.

No. 1 Wheat, or Wheat	
and Oats	\$13.50 @ 14.50
do No. 2	11.00 @ 13.00
Lower grades	9.00 @ 11.00
Tame Oats	11.00 @ 15.00
Wild Oats	9.00 @ 12.00
Alfalfa	8.00 @ 12.00
Stock Hay	7.00 @ 9.00
Straw, per bale.....	75 @ 95c

FEEDSTUFFS.

The downward movement of coconut meal continues, and rolled barley also has been marked down again. Other lines stand as before, but there is an easy feeling all around.

Alfalfa Meal, per ton....	\$18.00 @ 19.00
Bran, per ton	24.00 @ 25.00
Oilcake Meal	34.00 @ 35.00
Cocoanut Cake or Meal..	25.00 @ 26.00
Cracked Corn	41.00 @ 42.00
Middlings	33.00 @ 34.00
Rollod Barley	26.00 @ 27.00
Rollod Oats	31.00 @ 32.00
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

Several changes are noted in local garden truck, cabbage and cauliflower being lower, while rhubarb is a little firmer at the moment, and mushrooms have advanced, with diminishing supplies. Celery is in fair supply and of only mediocre quality, and is a little lower. No asparagus has appeared for the last few days, but larger offerings are due soon. The principal feature of the market has been the heavy offerings of southern vegetables, due to the arrival of delayed shipments, and as practically none of the offerings are in strictly first-class condition, the market is in poor shape, with an easy feeling in prices. Southern lettuce is much cheaper, and ordinary lots of beans and peas are hard to move, while eggplant has taken another drop. The supply of tomatoes is coming from Mexico, and repacked stock sells at \$2.50 to \$3 in small lug boxes.

Cabbage, per ctl....	\$ 1.00 @ 1.25
Cauliflower, dozen	20 @ 25c
Green Peppers, lb.....	3 @ 4c
Carrots, per sack.....	50 @ 60c
Green Peas, Southern, lb.	7 @ 13c
String Beans, lb.....	9 @ 15c
Tomatoes, Mexican, box..	2.50 @ 3.00
Eggplant, lb.	3 @ 5c
Sprouts, lb.	4 @ 6c
Celery, large, crate.....	1.75 @ 2.00
Rhubarb, box	1.25 @ 1.75
Lettuce, crate	50c @ 1.00
Mushrooms, lb.	10 @ 12 1/2
Asparagus, lb.	75c

POTATOES, ONIONS, ETC.

The better lots of sweet potatoes are held at a slight advance, as the supply is limited. Oregon Burbanks are also a trifle higher, but otherwise there is no quotable change. Oregon onions are very firmly held, and supplies from all sources are light. Eastern stock being offered within the range quoted for Oregon.

Potatoes:	
River Whites	\$ 1.00 @ 1.20
Sweet Potatoes, per ctl...	1.25 @ 1.75

Oregon Burbanks	1.25 @ 1.55
Onions: Yellow River, ctl.	3.00 @ 3.25
Oregon	3.25 @ 3.50
Garlic, per lb.....	7 @ 10c

Dairy Produce.

POULTRY.

Eastern hens are coming in freely, and the supply is rather slow to move off, causing a little easiness in prices. Young local chickens, however, find a very fair demand, and prices are quoted about as before, though the market is rather easy all around. Both live and dressed turkeys are a little lower.

Large Broilers	23 @ 24 c
Small Broilers, per lb....	27 @ 28 c
Fryers, per lb.....	20 @ 22 c
Hens, extra, per lb.....	18 @ 20 c
Hens, large, per lb.....	18 @ 19 c
Small Hens, per lb.....	18 @ 19 c
Old Roosters, per lb.....	14 @ 15 c
Young Roosters, per lb..	19 @ 20 c
Squabs, per doz.....	\$ 2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @ 22 c
do dressed, choice....	24 @ 26 c

BUTTER.

Prices have averaged a little higher for the last week than for that previous, though the change is unimportant. Supplies are coming in fairly well, but receivers have had little surplus to offer.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	32	33	33	33 1/2	33 1/2	33
Firsts ...	29	29	29	29	29	29

EGGS.

The egg market shows considerable fluctuation, but on the whole has been a little stronger than last week, although supplies from points around the bay have been increasing. The advance is accounted for by a stronger demand for shipment south, together with the small proportion of fresh extras in the arrivals.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	34	37	37	35	36 1/2	35 1/2
Selected						
Pullets...33 1/2	35	34	34	35	35	

CHEESE.

Monterey cheese has dropped sharply, on account of increasing production, and further declines are expected. Flats and Y. A.'s, however, have both been marked up half a cent.

Fancy California Flats, per lb...	18 1/2 c
New Young Americas, fancy....	18 1/2 c
Monterey Cheese	17 1/2 @ 19 c

Deciduous Fruits.

There is little feature to the apple market, all prices being steadily maintained at the old level. The stock in storage is gradually diminishing, with about the normal moderate demand for this season.

Apples: Spitzenbergs	\$ 1.25 @ 1.70
Greenings	1.00 @ 1.20
Bellefleur	1.15 @ 1.50
Newtown Pippins	1.40 @ 1.75

Dried Fruits.

Nothing new has developed in regard to prices, and the general situation shows little change. The only line of dried fruits that is attracting any special attention at present is peaches, this being the only description of which any quantity remains unsold. Packers still have their buyers out with offers of 4c, and are rapidly getting control of everything that growers are willing to sell at this figure. While considerable business has been done, according to reports the condition found in the country leads to a rather firm feeling, perhaps partly on account of the progress toward organizing the peach growers. So far, however, no better offer has been made. Outside markets are by no means active, but there has been a fair amount of business done in peaches in various parts of the country, and selling prices are working toward a firmer basis. In view of the shortage and high prices in other lines, this fruit ought to do much better as the spring trade gets under way. Other lines of dried fruit are practically nominal, as stocks of apples, apricots, figs and pears in growers' hands are negligible, and Eastern prices tend upward as stocks in dealers' hands decrease. Packers say there is only a

"handful" of prunes left in the country, and present figures are hardly a guide to what may be had for good lots if they are really needed. The raisin situation shows little change, being well controlled by the Associated Company. The New York Journal of Commerce says:

"According to some factors in the California dried fruit trade, a radical change for the better is impending in the market for dried peaches. It is well known that the conditions on the Coast have been for a long time most unsatisfactory and have been going from bad to worse in spite of the fact that peaches have all along been the cheapest of dried Coast fruits, and if the desire of consumers to reduce the cost of consumption were as real as it appears to be, there should long since have been a much larger market for this fruit, in the opinion of its handlers. It was immediately after the meeting of the special committee charged with formulating a plan for the organization of the growing interests, which was followed by a mass meeting of the growers, that the tone of advices from the Coast began to improve. No advance in f.o.b. quotations has been reported as yet, but the tendency of individual sellers to shade prices is disappearing. With the improvement in the tone of advices from the Coast, the spot market is hardening, and the upward tendency of prices here is said to have been accelerated by the cleaning up of low-priced spot stocks in the hands of a Chicago operator. Just how much was sold by this holder and what he got on the different grades could not be learned, but the prices were said to be below the average quotations and the quantity large.

"California prunes are strong on the Coast on the f.o.b. four-size bulk basis of 7c for 30s, 6 1/2 c for 40s, 6 1/4 c for 50s, 6 1/2 c for 60s, and 5c for 80s and 90s, with the possibility that these figures might be shaded a little in some quarters. The only demand of consequence for f.o.b. shipments from this quarter seems to be confined to the larger sizes, 40s particularly.

"California seeded raisins are getting attention, but there is no pressure to sell apparently, and prices are maintained on the basis of previous quotations. Loose Muscatels on the spot are closely cleaned up, recent sales of small lots to local consumers at prices under Coast parity having absorbed almost everything obtainable here outside of the holdings of jobbers, who are retaining what they have for their own trade."

Evap. Apples, 1913	6 1/4 @ 8 c
Apricots, 1913	10 @ 13 c
Figs: White	Nominal
Black	Nominal
Calimyrna	4 1/2 c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4 1/2 c
Seedless Sultanias	4 1/4 c

Citrus Fruits.

The clear weather of the past ten days has allowed orange growers to pick fruit and get large quantities into the packing-houses for shipment. The rains have caused the fruit to grow some and the prospects are now good for a bumper crop from California this year. Prices are not as good as wished for, but the cold weather in the East and the quantities of Florida fruit are responsible. As these two conditions will soon be obviated, the shippers from this State are anticipating better prices within a short time. At the Los Angeles auction on February 2, prices bid were very low, though small sizes helped to lower the average. Five cars were sold, the first averaging \$1.30, the second \$1.15, third 95c, fourth \$1, and the fifth car 75c per box. For good fruit f.o.b. California, the price ranges from \$1.25 to \$1.60. Lemons give promise of a big crop this season. At this time the prices vary from \$2.60 to \$3 per box f.o.b. California.

The only quotable change at San Francisco this week is an advance in limes. The local demand for oranges, however, has picked up in good shape, the movement being better than for some time past, and prices are firmly

held. With smaller arrivals, stocks show considerable reduction, but there is still enough on hand for all requirements.

Oranges: Navels	75c@2.00
Tangerines, crate	75c@ 1.25
Grapefruit, seedless	1.25@ 2.50
Lemons	1.75@ 3.50
Limes	4.00@ 5.00

Nuts, Honey, Hops, Etc.

NUTS.

The demand is light everywhere, but as supplies are short, values are well maintained in the jobbing trade. The appearing quotations are nominal, as there is practically nothing left in the country.

Almonds:	
Nonpareils	19 c
1 X L	18½c
Ne Plus Ultra	17½c
Drakes	15½c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HOPS.

A few small deals have been closed lately at about 21 to 21½c, but there is no activity in the market. Dealers are taking more interest in contracts for the 1914 crop, and some business is reported in the Sacramento district at 15c.

1913 crop	20 @22 c
1914 crop	14 @16 c

HONEY.

Prices have not notably declined, but with a continued light demand the local market is rather easy.

BEESWAX.

Prices are nominally maintained, but there is no trading of any consequence as offerings are light and there is no important demand in this market.

Live Stock.

Calves are very scarce at present, and a further advance has been made this week in the light and medium weights, as well as in dressed veal. Dressed mutton and lamb are also higher.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼@ 6½c
No. 2	5½@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	8¼@ 8½c
Medium	8 @ 8¼c
Heavy	6½@ 7½c
Hogs: Grain-fed, heavy	7¼@ 8 c
150 to 250 lbs.	8¼@ 8½c
100 to 150 lbs.	8¼@ 8½c
Prime Wethers	5½@ 5¾c
Ewes	4½@ 5 c
Lambs	6½@ 7 c

WOOL.

There is nothing doing in the local wool trade, the fall clip being fairly well sold out, and buyers will take no interest until spring shearing begins.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HORSES.

Sales of old livery stock, etc., are still too numerous to indicate a satisfactory condition in the local market, and shipments of fresh stock from the country have been rather light. Current business is mainly of a retail nature, and while there has been a little more interest lately on the part of drayage firms and other large users of horses, the demand is not sufficient to warrant large shipments.

Heavy drafters, 1700 lbs. and over	\$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500	150@200
Wagon Horses, 1250 to 1350	100@150
Delivery Horses, 1050 to 1250	100@125
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MULES.

1200 lbs.	\$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

BOOK FOR CALIFORNIA GROWERS.

A book written by the farmers and fruit growers of California in co-operation with E. J. Wickson, professor of horticulture of the University of California and editor of the Pacific Rural Press, has just been issued by that publishing company. The title is "One Thousand Questions in California Agriculture Answered," and the volume contains questions actually asked by California farmers on problems which have arisen in their work and which have been answered by Professor Wickson in the columns of the Pacific Rural Press, San Francisco. Professor Wickson has edited the replies in the light of whatever later information or improvement in methods has developed since. A book so fully in touch with California conditions cannot fail to be exceedingly useful to growers of this State. The price of the volume is \$1.50.—California Fruit Grower.

A large number of our old subscribers have been sending us clubs of new subscribers during the past two months. We want every reader of the PACIFIC RURAL PRESS to get a copy of our new book, "One Thousand Questions in California Agriculture Answered," and the easiest way is to send us a club of new subscribers. If you have not sent for our special subscription offer, we would urge you to do so at once. We have a young lady in our office who is always ready to write you a letter detailing the plan.

A very handsome catalogue and price schedule comes to our desk from the Roeding & Wood Nursery Co. of Los Angeles. The book covers economic and ornamental plants, including citrus and deciduous fruit trees, avenue and ornamental trees, choice garden shrubs and vines, palms, new and standard roses, including new and rare varieties. This catalogue is worth having and will be sent free upon request.

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CITRUS TREES—Washington Navels, ½ to ¾ in., 70c; Valencia, ½ to ¾ in., 75c; Valencia, ¾ to 1 ¼ in., 85c; Eureka Lemons, ½ to ¾ in., 75c; Eureka Lemons, ¾ to 1 ¼ in., 85c; Grape Fruit, ½ to ¾ in., 80c; Grape Fruit, ¾ to 1 ¼ in., 90c. Above prices are for Balled Trees f.o.b. Glendora; 5c less packed in moss. Order any kind of tree you like and I will furnish same. Florida Sour and native sweet seed-bed stock. One-third cash must accompany all orders. W. O. West, Glendora, Cal.

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HUNISA—The new grape. This grape will in a few years take its place with the Tokay, Malaga and Emperor as the leading shipping grape. Have a few thousand cuttings for sale. Write for prices. C. B. Cunningham, Mills, Cal.

STANDARD PRUNE grafting wood, 20c per foot, from trees that supplied the prunes for the Burbank Co. to make their standard prune exhibit at both the State Fair and Land Show this fall. D. W. MILLER, Linden, Cal.

2000 Bartlett Pears, 4-6 ft., 10c each. 500 each Arkansas Blacks, Winesaps, Spitzenbergs, Yellow Newtown Pippins, 4-6 ft., 5c each. N. M. CUNNINGHAM, Red Bluff, Cal.

ST. REGIS EVER-BEARING RED RASPBERRY PLANTS—Most famous berry grown. Also Improved Strawberry Plants. Send for catalogue. **OLD HICKORY SUPPLY CO.**, Dept. 3, San Francisco.

WRITE NOW FOR PRICE—Giant Crimson Winter Rhubarb, both of Burbank's and Wagner's. Produce fully 3 times of any other kind. Special offer for intending planters. **FRANK J. MATSUDA**, Morganhill, Cal.

WASHINGTON NAVELS, Valencia, Marsh Seedless Grape Fruit, 1½ to 2 ft. high. Thrifty, budded trees. Bare roots packed in moss, at 35c each on cars Redlands; or by parcel post, 15c extra. **Carroll B. Smith**, Box 9, Redlands, Cal.

WALNUT TREES—Late blight resisting varieties grafted and budded on California black and hybrid roots—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placencia. Dr. W. W. Fitzgerald, Elks Bldg., Stockton, Cal.

EARLY TOMATOES—If you have failed on account of dropping of the early blossoms, try the "Quarantino." Pkt. 10c; oz. 50c. Plant now. **J. S. PHILIPPI**, Norwalk, Cal.

BERRY PLANTS AND RHUBARB—Everything in small fruits for garden and orchard. Send today for price list **Louis F. Scribner**, Pasadena, Cal. R.F.D.

50,000 apple trees on rented ground, must sell for a short time; will sell at half price. Full Value Nursery Co., Petaluma, Cal.

TREES—Special prices on grafted walnut trees. Oranges, lemons, apricots, pears, peaches—everything. Get my prices. A. R. Marshall's Nurseries Box 64, Santa Ana, Cal.

ROBINSON CITRUS NURSERIES, San Dimas, Cal., growers of standard orange and lemon trees. Also Burbank and Mediterranean spineless cactus plantations.

STRAWBERRY PLANTS—Marshall, Gold Dollar, Clark's Seedling or Hood River, \$2.50 per 1000. First-class, well packed. **J. W. VINACKE**, Canby, Ore.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna Route 3, Riverside, Cal.

ORNAMENTAL AND FRUIT-BEARING trees and shrubs adapted to the Sacramento valley, at bargain prices **A. Norby**, Orland, Cal.

The **Franada Citrus Nursery Co.** of Ducor, Tulare County, Cal., will quote you Florida or Cuban sour orange seed delivered to any address. Write us.

ORANGE SEEDLINGS, sweet and sour. Grafted walnuts. Budded Avocado. Apple, pear, apricot. Trees of all kinds. Orange County Nursery, 4th and Birch, Santa Ana, Cal.

Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses, Bulbs. Lists ready. **H. A. HYDE**, Watsonville Nurseryman.

LAND FOR SALE.

VICTORIA, AUSTRALIA, WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California; no extreme heat or cold. Small deposit and 31½ years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairy, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from **F. T. A. Fricke**, Box W. 687 Market St., San Francisco.

HARBOR PROPERTY

Lots from \$200 to \$1000; easy terms. Seaside, Richmond and San Pedro settled investors thousands. Invest in Monterey shore frontage, the last of Pacific harbors. Agents wanted. Write **J. J. HARRIS**, Owner, Box 59, Fresno.

ALFALFA FOR RENT—275 acres of No. 1 alfalfa for rent for term of years; \$20 per acre; good gravity system for irrigation; San Joaquin county. Address Box 20, Pacific Rural Press.

Send for illustrated circular of best, most artistic orchard home in Santa Clara Valley; 20 acres. **JOHN F. BYXBEE**, Palo Alto, Cal.

FOR SALE OR EXCHANGE.

RANCH HOME FOR SALE—30 acres. Modern house, big barn, family orchard. Lemons, oranges, nuts, 5 acres peaches. 5 Thompson's grapes, 15 alfalfa. Water \$1 per acre. \$12,000. Terms; would divide. **N. M. LESTER**, R. F. D. 1, Gridley, Cal.

WILL EXCHANGE almost new Peerless touring car, cost new \$4500, for either beef cattle (calves or steers), or will give same to party to dig me deep wells. **H. L.**, 21 Montgomery St., San Francisco, Cal.

ALFALFA SEED, excellent quality, guaranteed free from dodder and weed seed, 12½c lb. f.o.b. Litchfield, Lassen Co. **W. E. BRADLEY**, Standish, Cal.

FOR SALE—No. 1 alfalfa hay in carload lots, any quantity up to 400 tons. Prices right. Address correspondence **Lodi**, Box 61, R. F. D. No. 3.

FOR SALE—Simplex Separator and Babcock Tester. **C. L. LIND**, R. D. 1, Box 20, Fresno, Cal.

WANTED.

WANTED—A graduate of College of Agriculture, University of California, with some practical experience, wishes a position on a modern dairy ranch. **Parker Talbot**, Clovis, Cal.

WANTED—Salesmen for Harbor Property. Write **J. J. Harris**, Owner, Box 59, Fresno.

WANTED—25,000 Burbank cactus leaves in varieties, for spring delivery. **P. O. Box 265**, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. **J. E. Lawrence**, 326 Clay St., San Francisco.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders rebored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. **MECHANICAL INSTALLATION CO.**, 181-189 Second St., San Francisco.

Plant your orchard with dynamite system. We planted, in the spring of 1913, 28,000 trees with a loss of only 2%. Contracts taken for planting trees in any part of the State; 18 years practical experience. Write to **ZUUR & CO.**, Santa Rosa, Cal.

FOR SALE—Wolfhound pups, sired by Eastern prize-winning imported Russian wolfhounds. Clean out foxes, coyotes, jackrabbits. Fancy stock. **B. M. Adams**, Lindsay, Cal.

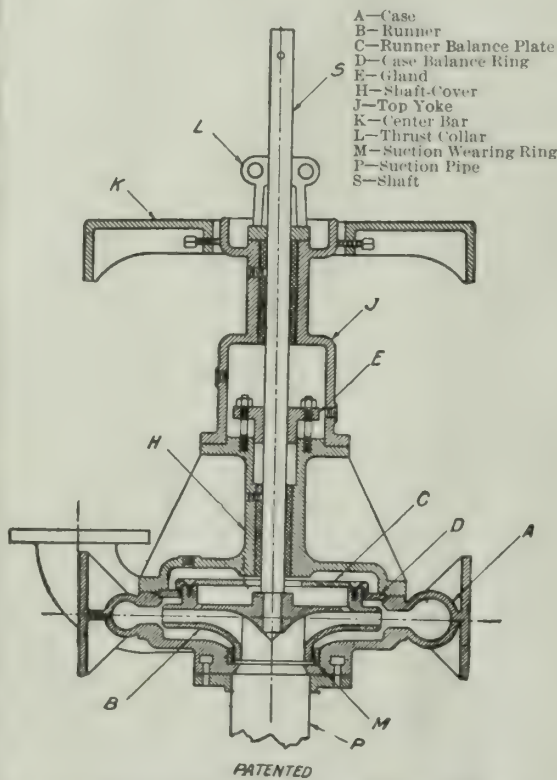
WANTED—750 well rooten Phenomenal berry tips. Price must be reasonable and must guarantee true Phenomenal. **F. L. MORRILL**, Fairfield, Cal.

To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. **SMITH'S CASH STORE**, 106 Clay St., San Francisco.

FREE—Wholesale catalogue of everything for farm and home. Engines, Pumps, Fence, Wagons, Harness, Furniture, Groceries, etc. **THE OLD HICKORY SUPPLY CO., Inc.**, Dept. 3, 85 2nd St., San Francisco.

Jackson Newly Improved Bottom Suction Pump

In placing this type of vertical pump before the public, we do so with a view of providing an additional line of vertical pumps intended for the more shallow pits, as they occur in great number. We manufacture this pump purely at the request of many of our friends, who have been acquainted with the different types of Jackson Pumps for years and who prevailed upon us to manufacture a pump at a more moderate price than our standard heavy duty vertical top suction pump.

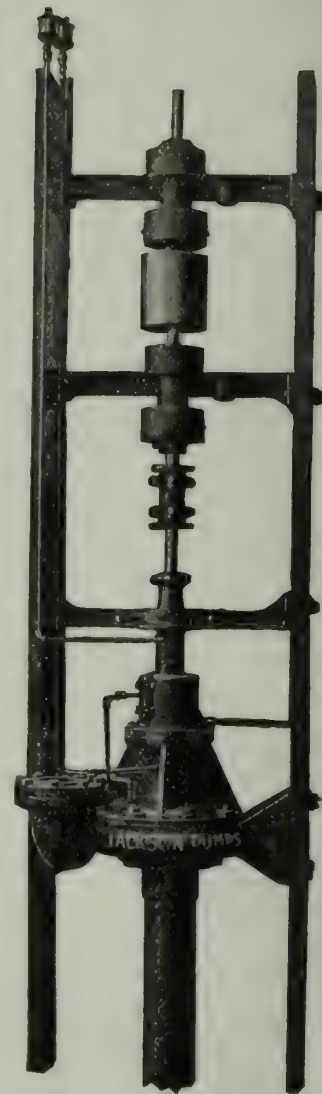


Sectional View of Pump Showing Working Parts.

If a perfect hydraulically balanced centrifugal pump means anything, it indicates an absolutely frictionless machine, operating with the highest possible efficiency, without any grinding or wearing out of parts. By consecutive tests it has been shown that with our 1912 balance; we are capable of carrying almost any weight that may be encountered by shafting and other fittings, which make up the revolving parts; it is sustained entirely on a water film, which in the past has proven so successful in all pumps of our make.

The parts that make up the balancing device are identical with those on the horizontal pumps and, if anything, these pumps are even more accessible, because they are dismantled from the top. By merely taking off the top cover, the impeller with stationary balance ring can be lifted out.

The suction ring on the impeller is of extra length and it is arranged to revolve within a renewable white iron wearing ring provided in the bottom cover of the pump.



PATENTED

Bottom Suction Pump in Wooden Frame.

If you will just remember that combined with these advantages is the Jackson quality of material and workmanship, your pumping problems can be more easily solved.

Our Bulletin No. 47-D tells the whole story.

Byron Jackson Iron Works, Inc.

357-361 MARKET STREET,

SAN FRANCISCO, CAL.

Los Angeles: 212 North Los Angeles St.

Works: West Berkeley, California.

"As TRUE as the Name" "AMERICAN"

Made in lengths of ten feet each, from a single sheet of galvanized steel, with a heavy taper collar riveted to one end.

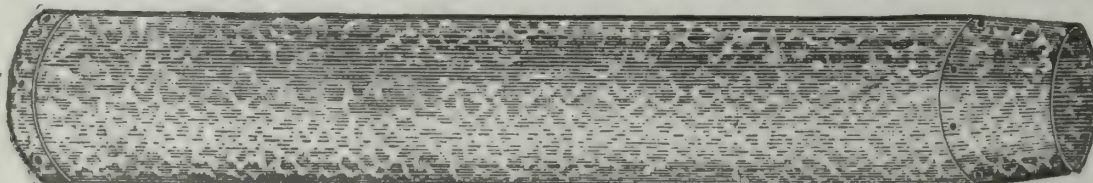
"AMERICAN" pipe is made with the "lock seam" or turned joint—contains no rivets, except at collar. A riveted joint has only 70% of the strength of the sheet metal, while a turned joint has 100% or more. This means that "AMERICAN" pipe will last as long as the

"Superior from Every Standpoint" Surface Irrigation Pipe

sheet steel. It is practically indestructible, and it is impossible to produce leakage in this pipe, as the turned seam is DOUBLE LOCKED. It is the pipe you will eventually use. Write for Illustrated Catalog.

We also manufacture steel tanks, wagon tanks, watering troughs, dipping tanks—in fact, anything in sheet metal. We make RIVETED pipe for underground use only.

AMERICAN STEEL PIPE & TANK COMPANY 343 Pacific Electric Building
LOS ANGELES



FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Farm Development, Hays.....	\$2.00
Manual of Laws.....	2.25
Farm Buildings.....	2.30
Breeding Farm Animals, Marshall.....	1.00
Hog Book, Dawson.....	1.00
The Dairy Farm, Gurler.....	1.10
Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoesmith.....	1.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees and California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
New Onion Culture, Greiner.....	.50
American Cattle Doctor, Dadd.....	1.00
Home Pork Making, Fulton.....	.50
Farm Gas Engines, Brate.....	1.10
The Book of Alfalfa, Coburn.....	2.00
Swine in America, Coburn.....	2.50
Feeds and Feeding, Henry.....	2.25
Date Growing, Popenoe.....	2.00

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PACIFIC RURAL PRESS,
420 Market St., San Francisco.

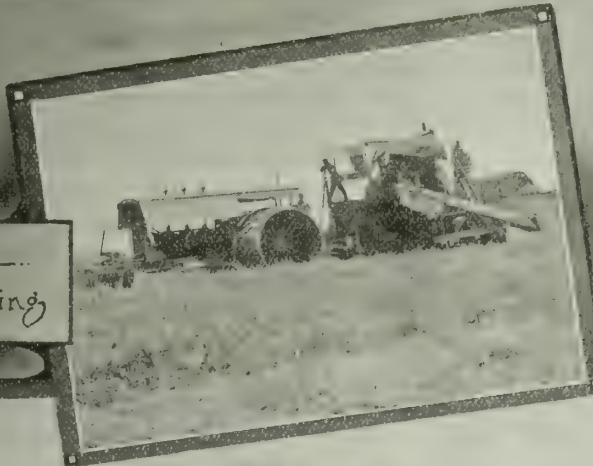
THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 7.

SAN FRANCISCO, SATURDAY, FEBRUARY 14, 1914.

Forty-Fourth Year.

Tractor ---
Harvesting



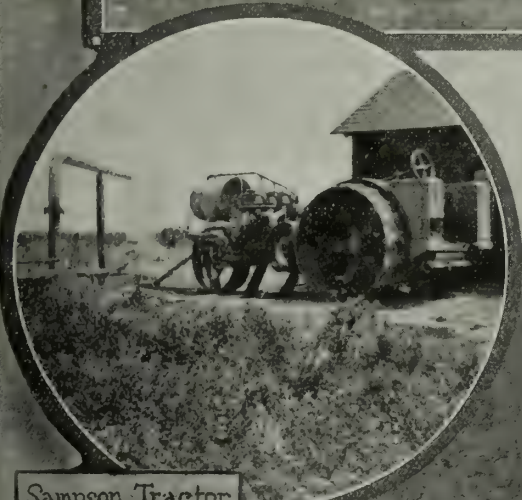
Orchard Cultivation ---
By Yuba Tractor.



Plowing with a ---
C.L. Best Tracklayer.



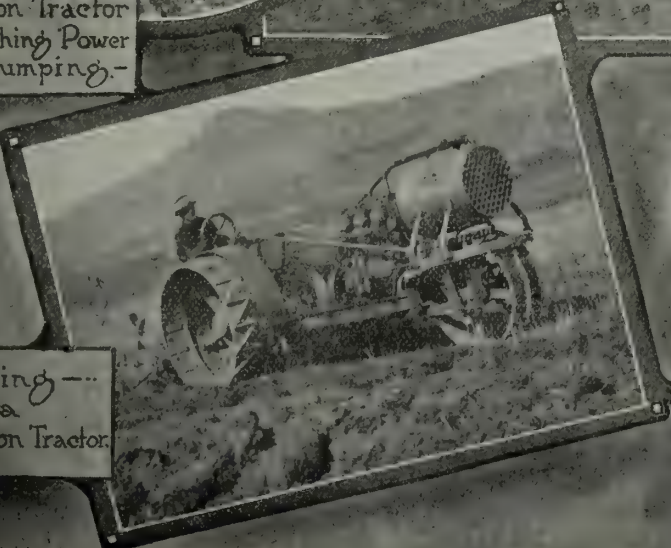
Sampson Tractor
Furnishing Power
For Pumping.



Holt Caterpillar ---
Used For Hauling.



Plowing ---
With a
Sampson Tractor.



Rumley Oil-fuel Tractor
Hauling Stubble Plows & Discs.



Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS CO., - PUBLISHERS

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Feb. 10, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.13	24.42	27.17	56	34
Red Bluff	.00	24.27	15.21	58	34
Sacramento	.00	15.09	11.90	64	38
S. Francisco	.00	21.82	18.93	62	44
San Jose	.00	13.52	9.96	66	32
Fresno	.00	8.66	5.72	64	36
Independ'ce	.00	11.14	5.60	54	20
San L. Obispo	.00	25.70	11.98	70	38
Los Angeles	.00	15.04	9.19	74	46
San Diego	.00	6.64	5.97	70	46

The Week.

This issue should be a "drawing card" for the publisher. If with all the tractors he has tackled up to this oldest of all living California agricultural journals he cannot get a move on the craft this time let her stick in the journalistic mud, say we. For it surely is a joy-ride for us; all we have to do is to climb aboard and jolly-up the chauffeur; it is probably as near as we shall ever come to having an automobile of our own. And yet, we have always calculated that the Rural was a pretty good hot-air engine of itself and therefore should be automobile; still as we look ahead at the string of tractors which have us in tow this week, we cannot help throwing up our hands and crying out in glee. This is surely going some, is it not? So off we go across the smiling landscape; to what bourne we know not—for that is the way with joy riding.

We judge by what we read in common newspapers that conversation during joy-riding is prevalently light and since we have sounded the depths of tractor construction and utilities upon other pages, we resign ourselves to lightness herewith.

Who First Pulled Another Man's Leg?

Do you know how the word "tractor" was drawn into the big dictionaries? You will not find it in the old Latin dictionary, which we thumbed so diligently more than half a century ago, but you will find the verb from which it has been derived and, fitly enough, it covers our situation at the present moment. For the parts, and the derivatives from this verb, cover not only hauling but dragging violently and one of them helps to describe the exploits of Hector around the walls of Troy in which he rode and rode until he rode the wheels off his tractor and then some more—as they do in joy-riding at this very day. Of course, if you are critical, you can claim

that the exploits of the Egyptian tractorians chasing the Israelites across the Red Sea, at which time they did some riding on their hubs and axles, must antedate the joy-riding of Hector. We will not argue the point. Our only claim is that though the verb "traho," and its older equivalents in Greek and Hebrew, helped in the vivid descriptions of those ancient tractations, the particular word "tractor" was not known to them, but has been by some fortunate accident reserved for the naming of one of the notable products of our newer civilization. It is time that, though they had no "tractor," the word "tractus" is found in the Latin; but that signified the thing drawn and not the motive power—very clear demonstration that the old Roman Empire got the cart before the horse; which is sufficient explanation for the decline and fall of it.

But, alas, the birth of the word tractor into the English language was, in a way, ignoble, for the first thing a tractor ever pulled in English was the leg of a man. Passing over some delicate and perhaps much more legitimate significations of the word, we come to the exploits of Elisha Perkins who lived in Connecticut from 1741 to 1799. 'Lish contrived a contraption consisting of two metallic plates and putting one on each side of a lame leg, set up the claim that they would pull the rheumatism out of it and these metal strips were called "Perkins' Tractors." It is an interesting fact that Perkins created quite a following and "Perkinism" was the science and practice of tractors in the eighteenth century. It is interesting that this Yankee notion, while still in quite good repute, was investigated by the Copenhagen medical faculty and a voluminous report in its favor was published by that learned body—which explains, perhaps, why Dr. Cook took his misfit North Pole to Copenhagen for endorsement. It possibly explains, also, why the Danes are melancholy. But we cannot undertake to explain all the mysteries of the world during one joy-ride and therefore do not pursue our own brilliant suggestions. We take it we have established our thesis that the tractor was first used to pull a man's leg for another man's purposes. How well it works even to this day is shown by the flourishing business aspect of this issue of our journal—due of course to the diligence with which our Advertising Manager has applied the word in its original significance to the extremities of manufacturers and agents of the splendid machines which we prominently exhibit this week.

Tractors and Draft Animals.

Of course, talking lightly, we can cross some very thin conversational ice. There is naturally some feeling outspread that to promote tractors is to work hardship for some branches of farming, such as the production of draft animals and the growing of provender for them. We will be frank and say that we do not know how far this claim will go nor just where it will hit, therefore we do not propose to be didactic about it. We must say, however, that since the dawn of history draft animals have been hit many times by the shafts of progress but never seriously hurt. We presume that the loading of invading armies on ships at the ports of ancient Italy or on the banks of the Nile, instead of taking them on long land journeys around the arms of the Mediterranean, must have affected the horse

markets of Rome and Thebes but our files of the commercial journals of these places are incomplete and we cannot cite figures to support the assumption. We have, however, no doubt that the use of ships did cause a cold wind to blow on the owners of elephants, horses, asses, dromedaries and camels and yet the world ever after has called for more and more of these beasts. More recently, in fact within our own time draft animals have not only survived all menaces of metallic mechanism but have increased in numbers and values the world over and there was never, perhaps, a better outlook for the man who produces a really good draft animal than now. When the railway put the stage-coach to the wall there was a wail for the displacement of the horse; repeated in the mourning of horse-growers over the coming of the bicycle, of the automobile and now of the automobile truck and tractor. And yet, if we mistake not, one pays more now for draft animals and the feeding of them than ever before. How, for instance, has the horse been hardest hit during the last third of a century, by substitutes for horses or by owners of horses who cherished and followed false notions of the right kind of a horse? How has the demon of speed most hurt the horse: through the ideal of speed in the greyhound or through the attainment of speed by the automobile? If we are not mistaken, the growers of horses came much nearer to making horses worthless than substitutes for horses ever did. We need horses for weight and strength, for beauty, for companionship more than our fathers needed them—as the present values of such animals clearly show. We are inclined to believe that the outlook for good horses of definite types is better than ever. We are willing to believe that the day for poor horses may be nearly over and we are prone to rejoice thereat because a poor horse is wasteful, inefficient and a reflection upon the intelligence of the man who keeps and feeds him. The standard of efficiency is now being exalted by all farmers, sometimes unconsciously, sometimes with clear perception and design. Very few owners now want horses which can live on swale hay and stand up to their hocks in mud and manure the while. Efficiency demands a proper horse properly treated and it will be an advantage on the whole if all the skates and plugs should be tractored under. A good horse has nothing to fear; he is as sure of his place as the man who loves and knows how to produce and to use him. We glide by the economic comparison between the horse and his substitutes: there are suggestions of that in other columns.

Food for Man or Beast.

We take it that the apprehension that the use of tractors will work hardship to those who grow hay and grain for horse feed is, on the whole, over-drawn. There may be individual cases, of course, in which serious inconvenience may arise, but they are apt to be exaggerated, both in kind and degree. Hay prices have had a higher average during the last decade than since the Civil war; oats and barley have quite as good an average; there has been no decline although production has multiplied. The tremendous increase in the cow-power of the country and the present necessity for much greater increase in animal products, both of the dairy and of meats, makes it very doubtful if all the hot air which can be used

will reduce the demand for feeding stuffs; in fact it is possible that such crops, even grown by hot air, may yield much more profit for feeding more good horned stock than by maintaining poor and inefficient horses and mules. And then suppose one does not grow so much for poor horses; it looks as though more money would be made by growing, at much less cost, food for hungry men. We cannot see much of a menace to agriculture which is worth doing; there may be temporary inconvenience; there may not be even that.

Tractoring for Others.

There appeal to us what may prove to be very interesting new phases of farm life led in by the tractors. There are hosts of men in rural communities whose natural bent and talent is for mechanical affairs. We remember a young farmer whom we caught once building a three-story bird house for his wife when he ought to have been plowing while the adobe was just right. There is many a country young man goes to town to get a chauffeur's job so he could indulge his taste for mechanics. We know what happens to many of them in the joy-riding under-world of the city. Rural life needs an uplift mechanically as well as scientifically. It would be of great advantage to farming if there should be more opportunities for such youth in the country—something they could take more interest in than in barbering muddy, sweaty horses and something with more variety about it than hay bailing or grain threshing have. To such, on the home farm if it is large enough, or in custom work around the neighborhood, the dignity, power and multiplicity of the tasks of the tractor would be satisfying and afford a more elevating occupation than swearing at a bunch of mules—although even that is not so bad if you are naturally built to enjoy mules. The command of a custom tractor will give a young man a sort of commanding position in the neighborhood, as per telephonic dialogue herewith:

Hello, Bill, can you come and plow me up today; the ground is just right.

Sorry, Mr. Jones, but I can't possibly get you into the machine today.

Well, that's bad; when can you come?

Not sure; I have a list going to the middle of next week.

That's worse, Bill; I wish now I hadn't sold my mules.

Sorry Mr. Jones but they wouldn't help you; if you started now you wouldn't get finished before I could turn you over with the machine. And then how tired you'd be by then, too.

Yes that's so and my siatiky been bad too, lately.

Sorry, Mr. Jones, you're in that fix. Say, how's the moon up your way; got any spots on it?

Why, Bill? Does moon-spots make siatiky?

Dern if I know. Was only thinking as your field ain't very big mebbe I could finish up to Smiths tomorrow night and do a little tango on your field by moon-light on my way home.

All right, Bill; mighty good of you an' I won't fergit it; s'long.

And so Bill has risen perhaps from a dull dreamer at old line farm work which he hated, to the command of a mechanical enterprise which pays him well and makes him sought for by those who had only a careless nod for him before he found himself on the hurricane deck of a tractor.

Tractors and Good Roads.

Tractors will not only help to make good roads themselves but they will force others to make them. When a man wants a tractor of his own or to get a custom tractor whenever he needs it he becomes an agitator for better roads automatically. If he is on a highway full of soft sloughs and bad culverts and bridges he loses time or is out of the game entirely. We presume it is a fact that tractors make good roads better and bad roads worse, therefore it becomes essential to get into the good class with everything that leads to your place or round-about in it. This will be in the end an economic gain although it may come hard at first. It will bring about cheaper movement of products which is one factor of better profits in them. We have some good matter on good roads coming along so we use the tractor to pull them under the notice of readers.

A Suburban Tractor.

But we have been getting too heavy—really becoming serious in some things, which is not fitting to a joy-ride. We have recently heard the story of a man at Salinas who formerly kept a horse for driving about and for plowing his garden at the proper season. He bought an automobile for pleasure and having sold the horse, the plowing job was up to the auto also. The story says it was this way: "He had a rope and a one-pulley block. He fastened the pulley on the fence, took the plow to the further end of his 'farm,' (which is 65x75 ft. in area) set the plow, put the rope through the block and hitched it to the automobile. One boy drove the auto forward and backed it up; another moved the pulley along the fence the width of the furrow, and the plowman dragged the plow back to the other side of the 'farm' and held it true across the tract. He accomplished in three hours what it would have taken a week to spade."

And the lesson of the story seems to be that a man who would take a week to spade that much land surely ought to have a tractor, under him or over him—it does not matter much which. The only good thing in the story is the fence.

Queries and Replies.

Querists must submit full names and addresses.

What a 2-inch Well May Do.

To the Editor: I would like to know if it would be possible to pump water out of a 2-inch cased well fast enough to water 10 acres of young fig trees. I subscribed for the PRESS again because I need it.—P. T., Clovis.

It depends first of all upon how good your pump is and whether there is any water in the well. It will depend next upon whether your soil will carry water any decent distance in a furrow, or whether it will only run a few feet and sink out of sight. Supposing the pump is good, the well wet, the soil furrow fit to carry water, and the trees blocked up and not stretched across the landscape Indian-file, you can surely irrigate ten acres of young deciduous trees in one or two furrows to the row as many times as the trees need it—providing the rest of the land is idle and kept well cultivated. If you have to fill checks or if you wish to irrigate inter-crops, you would need a reservoir or a larger well and pump, or both, perhaps.

In the former case your head-ditch should be a flume or a pipe, so as not to lose water before it gets to the furrow heads.

We are glad you have a good and sufficient reason for subscribing for the RURAL PRESS. Some people insist on taking it so as to have something handy to throw at the cat, and we do not seem to be able to wholly stamp out this pernicious practice.

Carrying Power of the Scion.

To the Editor: I have some good large nine-year-old Emperors which I am thinking of grafting over. If I do graft, would it be safe to put in Thompson scions? I have been told that the seedless varieties will not do well on roots which produce seeds. I would especially like to know if it is safe to use Thompson scions.—Reader, Del Rey.

In these days of extraordinary emphasis on bud-variation, root-and-stock influences, etc., we are apt to lose sight of the fundamental fact that the scion does, in all save very rare exceptional instances, have the power to carry over its own characters and to thoroughly dominate the stock. If this were not so, all our vast nursery interests and our great commercial fruit growing enterprises would fly into confusion. If this were not so all our modern agitation for selection of buds from growths of the best types would be unwarranted. You are wrongly advised. Thompson will be Thompson, surely enough for all commercial purposes. Our seedless grapes may once in a while show seeds, but it would be easier to shoot them in with a gun than to grow them in from the root. Roughly speaking, it is the function of the root to take part in producing conditions which underlie bloom and fruit, but it is probably the function of aerial parts of the plant to develop the seed by pollination or otherwise.

Idaho Wishes to Know About Our Peaches.

To the Editor: We have a peach product which does not pay well in Eastern shipment because it strikes the market at a bad time. What can you tell about peach driers and the prices paid for peaches for canning and drying? I wish to know all your methods of handling peaches.—Grower, Idaho.

We can only say that we are not making any dried peaches to speak of in artificial evaporators. Our dried peaches are cured on trays in the open sunshine. Concerning work with evaporating machines, you can get best information from Oregon and Washington. The prices paid for peaches for drying vary greatly in different parts of the State and according to conditions of the market. The range would be from \$10 to \$20 per ton. Prices for canning are higher according to nearness of canneries, suitability of varieties, etc., and range from \$20 to \$40, and in rare instances even to \$60 per ton has been paid for selected yellow clings of preferred varieties. Just at present our peach outlook is a little clouded by a slackened demand for dried peaches, and if present prices should continue until next summer it is doubtful if anyone will buy peaches for drying. The canning business, fortunately, is in better condition. The only way to get satisfactory practical information and to reach judgment as to how far you should consider our methods, would be for you to come or send a qualified peach grower to this State during the peach season, say in August, and instruct him to visit several localities and to observe their policies and methods.

The Demand for the Tractor in Farming.

[Written for the PACIFIC RURAL PRESS by W. H. SCHRADER.]

The high cost of living has been attributed to nearly everything under the sun, so it may sound trite to say that it is largely due to the failure of agricultural production to keep pace with the world's demand for food supply; but we believe this to be a fact, nevertheless. To increase this production, we must increase the efficiency of farm work. In farming, as in all industries, the great factor in efficiency is power. Farm power up to the beginning of the present century has been horse-power. Lately it has been supplemented to a considerable extent by mechanical power; but it must be so supplemented much more rapidly in the future if agriculture is to meet the demands made upon it by the world's hunger.

This does not mean that the horse is to be eliminated. On the contrary, just as in the face of the labor-saving machinery that is constantly coming into use, the price of labor is steadily increasing, so in spite of the automobile truck and the tractor the price of the horse is steadily going up. The horse has and always will have his place in farm work. However, there are many branches of the work in which the tractor can and ought to be used to great advantage.

THE TRACTOR IN PLOWING.—Agricultural authorities agree that one of the

important things toward increasing farm production is deeper plowing. But deep plowing requires power. Tests have shown that plowing requires from 2½ to 14 foot-pounds of power per square inch, depending on

quired is 3½ foot-pounds (this is very low and requires very favorable conditions), to plow an acre 7 inches deep requires a total of 13,027,950 foot-pounds. This sounds like a stupendous task, yet with tractors it may be the work of only a few minutes.

The above illustration shows a remarkable outfit turning over an acre every four minutes. This demonstration has been described as follows:

trip, plowing at a rate of an acre every four and a quarter minutes. Four men, three engineers and a plowman, men of skill and intellect rather than plodding clodhoppers, handled the valves and levers of an outfit that equaled the work of 50 men with sulky plows and a hundred and fifty straining horses." That was quite a feat for the East, we will admit; but we want them one better in



Plowing at the Rate of an Acre in Four Minutes.

the nature and condition of the soil and the style and condition of the plow. (A foot-pound is the measure of power required to lift a pound weight one foot in a vertical direction.) Supposing that the power re-

"At Purdue University, three 30-horsepower kerosene engines hitched to one grand plow of 50 bottoms broke all known records for plowing. This twentieth century monster broke out a strip nearly 60 feet wide at each

California recently. Last spring, in a 4,000-acre field of the Solano Irrigated Farms Co., 10 caterpillar tractors, drawing 100 Oliver plow bottoms, broke a strip over 100 feet wide at the rate of an acre every 2 minutes, followed



Horse Feed

Damaging Results to Trees

Dead! \$200.00 Gone

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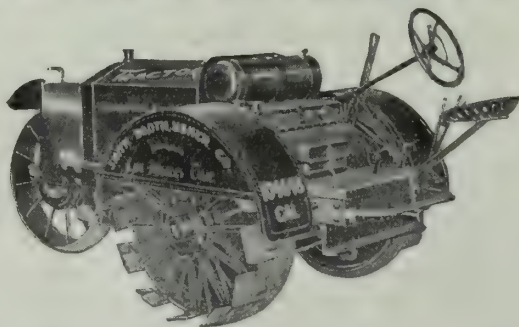
Large Tractors pack the soil and are useful only on large grain ranches

REASONS WHY

YOU NEED A TRACTOR AND THE RIGHT KIND OF A TRACTOR

IN THE ORCHARD it obeys the hand, cultivating as deep and as close under the overhanging branches as you will, without the damage done to trees with horses.

ON THE ROAD it runs on solid rubber tires at any speed from two to eight miles an hour pulling as much as three teams—twice as fast.



THE LAMBERT STEEL HOOF TRACTOR

WHILE AT REST it eats nothing, NO feeding—NO watering—NO stables to clean. LESS work—LESS worry—MORE pleasure and MORE PROFIT.

IT IS DOLLARS in your pocket to cultivate deeper, giving the tired surface soil a mixture of its richer self beneath—

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by 2 caterpillars drawing 100 feet of harrows and another drawing the cook wagon, so that camp could be made whenever eating or quitting time overtook the outfit. The cost of plowing on the California tract was about 50 cents per acre and of harrowing 15.

Rapid plowing is important as well as deep plowing. Some soils must be worked when in right condition. Often crops or crop failures depend on working the ground and getting the seed in at just the right time. With tractor power, the ground can be plowed, harrowed, the seed sown and covered in one operation. Work can be carried on night and day, rain or shine, until the crop is in. A great deal of plowing for grain in this State is done in summer when the ground is hard and dry. For this work the tractor and the up-to-date engine gang are the ideal machinery. It is safe to say that tractors have cut the cost of deep plowing in two.

TRACTOR HAULING.—Tractors have been used for some time in this State for hauling grain from the farm to the mill, fruit from the orchard to

wild dream to expect that in the future we may see loaded wagons picked up by a tractor from farm to farm along the highway, just as loaded cars are picked up by the locomotive along the railroad from station to station.

TRACTOR ORCHARD CULTIVATION.—The introduction of the use of tractors for orchard cultivation is a recent one, and credit for the introduction belongs largely to this State. Even an Eastern writer admits this. He says: "Such tractors already used by many California fruit-growers are bound soon to invade the East and put orcharding on a more profitable basis." He goes on to say: "They are built low down and narrower still for orchard work. What orchardist is there who could not use a four-ton tractor, less than five feet high and six feet wide, which can turn short from one orchard row into the next, go under the limbs close to the trees and by reason of the peculiar shape of the drive wheels leave the ground loose and mellow on top?" The orchard tractor means that power can be had for deeper cultivation, essential to a great

short, it means the control of conditions that formerly were up to Nature."

California is rapidly being cut up into moderate-sized farms, and there is a very promising field for the type of tractor that is suitable for orchard and small-farm work.

TRACTOR HARVESTING.—Probably nowhere has greater efficiency and economy in farm work been reached than harvesting in California with the tractor and combined harvester. This monster machine, cutting, threshing, and sacking the grain, and bunching the straw at one operation, is drawn along by the tractor, which also generates the electricity for the motor driving the sickle and the other threshing machinery.

THE TRACTOR FOR STATIONARY POWER.—Practically all types of tractors are equipped with power pulleys and when not otherwise engaged may be used for stationary power. Some of the uses to which they are put on the farm in this capacity are:

Pumping for irrigation.
Cutting feed.



A Tractor Train.

the cannery or shipping point, beets from field to sugar factory, etc. The construction at this time of thousands of miles of State highway will give an impetus to this phase of the tractor's usefulness. A 70-horsepower engine will haul a load of from 35 to 40 tons at a rate of from 2½ to 3 miles per hour, and, as in plowing, the cost is just about one-half. Wagons in great numbers can be strung out behind a big tractor. It is no

moisture reservoir, and the fruit trees need the most water at the driest time of the year. It means quicker cultivation, hence better weed control. It means plenty of power for plowing under cover crops, which prevents the loss of plant food and puts it in a form where it will readily become available. It means the putting of this vegetable matter deep beneath the surface where it will add to the moisture-holding capacity of the soil. In

Filling silos.
Sawing lumber or wood.
Baling hay.
Clearing land, pulling stumps.
Running threshers, seed cleaners, etc.
The tractor in this form is a faithful servant. It is willing and able to work every day in the year.

HISTORY OF THE TRACTOR IN CALIFORNIA.—One of the first important events chronicled by the PACIFIC RURAL PRESS was the bringing of the first tractor, a Thompson Road Steamer, to California over the newly opened transcontinental line. This is described in the issue of January 15, 1871 (the first number of the paper was issued January 1), as the first steam-engine of its kind to arrive on this Coast. The issue of February 18 of the same year records that "A public try-out was given this tractor engine at the agricultural grounds with a gang of five plows attached. The plows were set 4½ inches deep in hard-packed adobe. The engine moved a mile in less than half an hour, and the plowing was pronounced excellent." In the autumn of the same year we learn that it was being used near Stockton, plowing 25 acres a day with two gangs of four plows each.

The pioneer manufacturer of tractors in this State was Daniel Best, who started building steam tractors in San Leandro about 1888. This tractor was nicknamed the "Pathfinder." With her enormous oil production, it was inevitable that the steam tractor in California should have given way to the gas tractor. Climatic and soil conditions here have also had their influence in bringing about various types of tractors to meet these conditions. In recent years the manufacture of tractors has become an important in-

The Test of the giants in Farm Tractor Will Clearly Demonstrate the Superiority of the Track Layer

The C. L. B. 70 H. P. Track Layer will be exhibited at the CALIFORNIA FARM POWER DEMONSTRATION at Fresno, on February 19th, 20th and 21st, and at Marysville on March 5th, 6th and 7th. At those places and on those dates we will be prepared to demonstrate the absolute superiority of our Tractor over any other Tractor manufactured.

Gold Medal California State Fair, Sacramento, 1913.

Gold Medal California Land Show, San Francisco, 1913.

The C. L. B. 70 H. P. Track Layer will Plow, Harrow, Seed, Harvest, Ditch, two-thirds cheaper than it is possible to do with mules or any animal power, and will make continuous turns, loaded, as short as any Track engine on the market.

Both Tracks on a C. L. B. 70 H. P. Track Layer are pulling the same, whether going straight ahead or making a turn. No other Tractor of this type does this.

The C. L. B. 70 H. P. Track Layer eliminates the twists and strains, common to the type which only pulls with one track on the turn.

The 8 inch face internal gear drive on a C. L. B. Track Layer, with its 8 inch face driving pinion, does the same work as second motion chain drives. Hence the C. L. B. 70 H. P. Track Layer has only two moving parts in its internal gear, against approximately 40 moving parts in other track laying machines.

For further particulars, data and information call or write

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Gas Traction Co.**

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R. F. WILSON, Stockton, California.

Raise Bigger Crops By Tractor Farming



Plowing at the right time and the right depth more than doubled the crop and increased the profit per acre from \$8.35 to \$16.87 or more than twice as much. The Kansas State Agricultural College proved this by experiments extending over three years.

Farmers long ago learned that plowing

deep and at the right time paid big profits but the question was how to do it. Horses and mules are too slow. And you pull the life right out of them if you set your plows deep. Tractor power has solved the problem. Hot weather doesn't bother a tractor. Hard ground doesn't stop it. It needs neither rest nor sleep. Many Avery Tractor owners plow night and day. With an Avery Tractor you can do all your work in the right way at the right time, which means bigger crops.

AVERY "ONE-MAN" OUTFITS
"Light-Weight" Tractors and "Self-Lift" Plows

Letters from hundreds of farmers prove that Avery Tractor Farming is cheaper than horse or mule farming

One big reason for the success of Avery Tractors is that they are the lightest-weight tractors built, considering their draw bar pull. No useless dead weight to waste power and fuel.

You can run an Avery Outfit alone. No plowman needed—save his board and wages.

Avery Tractors are built in five sizes—

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Jobbers: Babb-Carter Co., Oakland, California
Also manufacturers of Avery Gas Farm Trucks, Undermounted Steam Traction Engines and "Yellow-Fellow" Grain Threshers.

from a small 8-16 H. P. to a large 40-80 H. P. Pull from 2 to 10 plows. You can do Tractor Farming with an Avery on any size farm—large, medium or small.

Learn All About Tractor Farming With Avery Outfits

Write for Avery Selling Plan—low prices—strong guarantees—sold on approval plan. All backed up by a big, successful company. Our new book "Tractor Farming" tells how and why to farm with Tractor Power. Our 1914 catalog of Avery Tractors and Plows tells all about how they are built and what they will do. Write for both—mailed FREE. Address—

dustry in the State. Recently California-built tractors have carried off many honors in European and other foreign competitions and exhibitions. A number of manufacturers are now turning out tractors in ever increasing numbers.

The Best Manufacturing Co. has been consolidated with the Holt Manufacturing Co., one of the largest concerns on the Coast, with headquarters at Stockton, California, and branches in various parts of the United States and Canada. This firm puts out several types of tractors the best known of which is the "Caterpillar."

The C. L. Best Gas Traction Co., headed by C. L. Best, son of Daniel Best, has a large factory at Elmhurst station, Oakland, turning out the six-cylinder round-wheel tractor and the "Tracklayer."

The Samson Iron Works, of Stockton, are building an improved type of small tractor for farm and orchard work, called the Samson Sieve Grip.

The Yuba Construction Co. at Marysville is building a small tractor of the track-laying type.

With all these factories and others turning out tractors in great numbers, there is still room for more. All the leading Eastern tractor manufacturers are represented in this State and do a good business.

Two types of plows are built for use with gas-engines, the disk and mold board. Disc plows are built in California by Baker & Hamilton and Spalding-Robbins Disc Plow Co. The Oliver Chilled Plow Works, John Deere Plow Works, and the H. C. Shaw Co. furnish the mold-board type of plow.

COST, RUNNING, UPKEEP, CARE, AND LIFE OF THE TRACTOR.—The original cost of the tractor is usually less than that of the number of horses it will replace. Tractors are no more expensive than automobiles, nor are they harder to run. The farmer or farm hand of ordinary intelligence can usually learn all that is necessary from the manufacturer's representative in a week's time.

The cost of upkeep is not large as compared with the saving of expenses. The energies of tractor builders have been devoted toward eliminating break-downs and trouble. These are expensive mainly because they mean delay. Much has been accomplished in this line by using only the best materials, and by protecting motor, transmission and gears from dirt and dust.

Ordinary care of a tractor consists in not overloading it. It should be kept well supplied with fuel, lubricating oil, and water when at work. It should be gone over often and everything kept tight and in place. When not in use the tractor should be sheltered. Water and fuel should be withdrawn; but it should be kept well oiled to prevent rust in the bearings, etc. With such care a good tractor will give efficient service for many years.

COARSE ORANGES AND ORANGE STORAGE.

To the Editor: What is the cause of oranges being rough and thick rind at the upper or stem end? Is there any danger of applying too much manure to orange and lemon trees? If so, and it is already done, what is the remedy? How must oranges be stored to hold them until they can be sold?—E. O., Orland.

[Oranges become too coarse when

growing on brash sucker-wood, as already discussed in this journal (see issue of January 17); or they sometimes come that way on young trees which naturally have great vegetative energy; or they may be forced into such excess growth by too free use of stable manure or other nitrogenous manures; or the bud taken to make the tree from may have had ancestry. There is, therefore, danger in using too much stimulating manure. If it has already been done, use a fertilizer of potash and phosphate alone, or use none and wait for the growth to calm down. Oranges can be kept for a time in a cool place where the air is not too dry, or they may be held in commercial cold storage. Any orange which has the skin surface abraded or cut will not keep in a satisfactory way and will destroy others also.—Editor.]

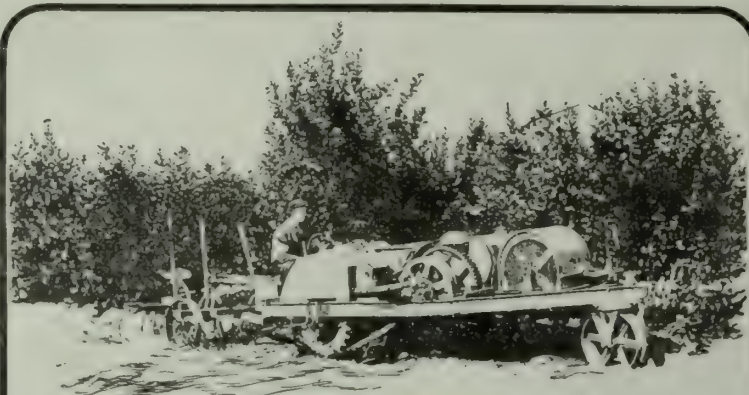
ROTATION OF FRUIT TREES.

To the Editor: Will you kindly answer the following in the columns of the PRESS? Why do peach trees set out on land which has recently been cleared of old orange trees make so much harder growth than peach trees set out on land recently cleared of old peach trees? Neither of these pieces had any fertilizers applied during the time the previous crops were upon them other than the weeds which came up.—R. C., Ontario.

[We do not know. It would be easy to say that one tree takes certain things from the soil and another tree takes other things—therefore, rotation is the secret of the behavior which you note. We have an opinion that that easy answer is overworked. If the orange trees were irrigated and the peach land run dry, there would be a good basis for an argument for

accumulated moisture which might act through a long period. But then we do not know what you mean by a harder growth—hardy against

what? We know neither what the question means nor what is the answer to it. If any reader is wiser, let him take a try at it.—Editor.]



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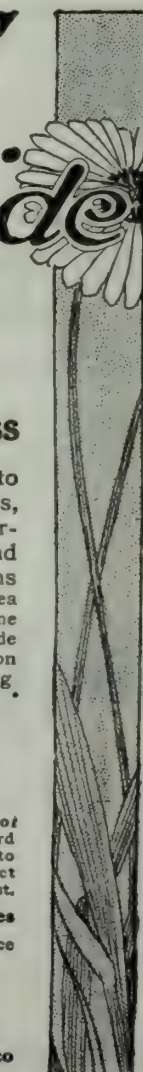
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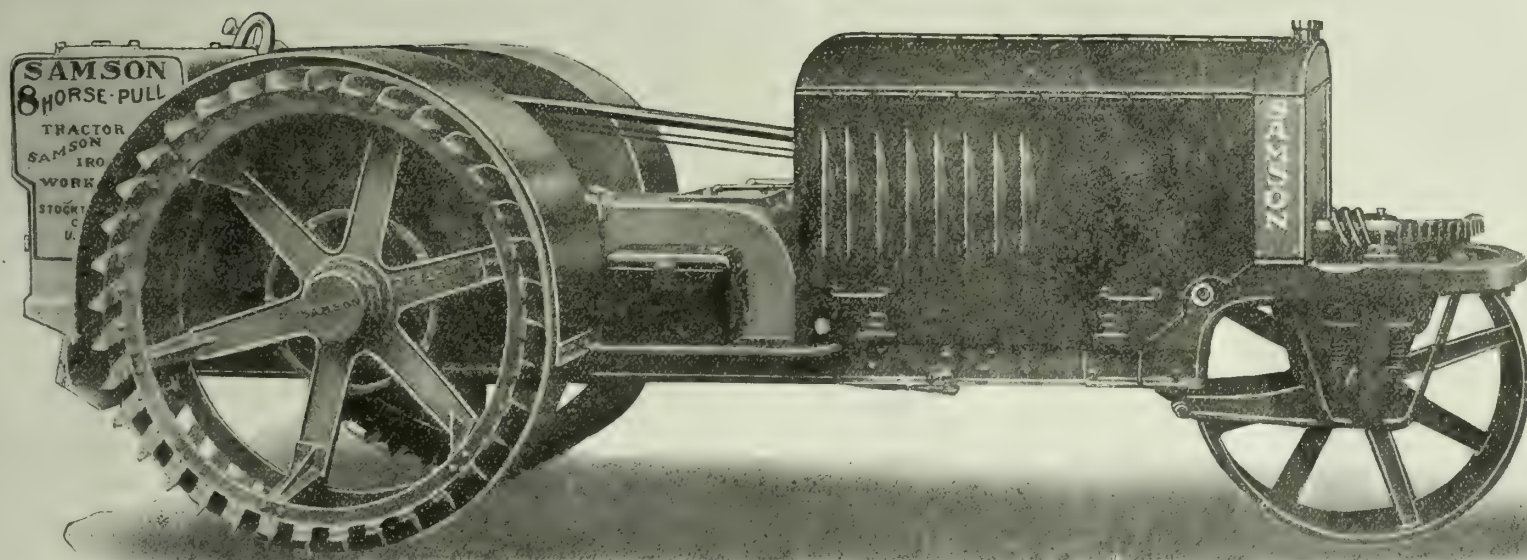
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We have become justly noted for the quality and reliability of our products. We endeavor to maintain the highest standard in everything we grow. That we have given value received to our thousands of patrons in the West is proven by the fact that we are the largest seed dealers on the Pacific Coast.

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Headquarters for alfalfa, grasses, clovers, etc. Correspondence invited.

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SAMSON SIEVE-GRIP TRACTOR

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FOR ORCHARD, VINEYARD AND GENERAL FARM WORK

Designed for an 8-Horse Drawbar Pull With Surplus Power to Pull Its Load Up Any Reasonable Grade or in a Pinch. 25-30 h. p. for Any Stationary Work.

GENERAL SPECIFICATIONS

TRACTOR.

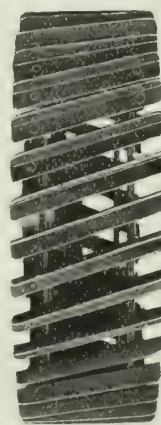
LENGTH OF TRACTOR—12 feet 5 inches.
WIDTH OF TRACTOR—60 inches.
HIGHEST PART ABOVE GROUND—50 inches.
TRACTION WHEELS—Diameter, 48 inches.
FRONT WHEEL—Diameter, 32 inches; 12 inches wide. Has 3 guide rings.
FRAME—I-beams and crucible steel.
TRANSMISSION—Vanadium steel gears, enclosed and running in oil.
DRIVE—Floating axle with hub drive to crucible steel traction wheels.
SPEEDS—Two ahead and two reverse, 2 miles and 4 miles per hour. Can be varied with speed of engine.
CLUTCH—Samson improved marine; double expansion; runs in oil.
LEVERS—Two, one for gear shift, one for go ahead and reverse.
BRAKES—Independent foot brake for each traction wheel for making short turns.
PULLEY—20-inch diameter, 8-inch crown face, 1 1/2-inch bore. Speed, 250 to 300 r. p. m.
WEIGHT OF TRACTOR—7,500 pounds.

POWER PLANT.

ENGINE—Samson four-cylinder L head Tractor Type, four cycle.
CYLINDERS—5-inch bore by 7-inch stroke.
CRANK SHAFT—Diameter, 2 1/2 inches, 1-inch offset.
CRANK PIN—Diameter, 2 1/2 inches by 2 3/4 inches.
FIVE CRANK SHAFT BEARINGS—Total combined width, 17 inches.
PISTON PIN—1 15-16-inch diameter and hollow. Three oiling methods to piston pin.
VALVES—Inlet and exhaust are mechanically operated. (Valves are lifted plumb, without side strain, and are enclosed.)
VALVE CHAMBERS—Water jacketed and provided with caps for easy access to valves.
CLEANING PLUGS—In center of cylinder heads, easily removed.
ENGINE SPEED—525 to 575 r. p. m.
BRAKE HORSE POWER—25 to 30.
IGNITION—High-tension magneto mounted on engine.
CARBURETER—Has no moving parts.
PUMP—Rotary. (Bronze.)
RADIATOR—Tubular, with fan.
LUBRICATION—Mechanically operated forced feed oiler, with tubes leading to each part to be lubricated.
FUEL—Engine distillate. Fitted to use kerosene, when ordered.



Sieve-Grip Wheel with Road Band in Place.



Sieve-Grip Wheel Showing Grips and Cutting Rings.

ENGINE AND TRANSMISSION COMPLETELY PROTECTED FROM DUST OR DIRT.

WHEELS DO NOT SLIP IN WET OR SANDY SOILS

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SAMSON Horizontal Stationary Oil Engines,
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SAMSON Vertical Oil Engines, 16 to 200 h. p.

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SAMSON Centrifugal Pumps, 25 to 50,000 Gallons per minute capacity.

SAMSON Pumping Plants, Complete, installed and guaranteed.

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Advancement of Tractor Farming.

The following is a quotation from a recent publication "Horse, Truck and Tractor," epitomizing the basis on which the tractor method of farming must rest:

"Business swings towards lowest costs, as inevitably as the waters fall over the cliff of Niagara. No matter what our theories may be and no matter what our wishes may be, the horse is going out and the engine is coming in, because the engine is the fittest to survive."

The farmer who is to succeed today must run his farm on a business basis. Reduction of operating cost when attainable without a reduction of efficiency is the first thing that the farmer should give his attention to. It means farming at largest profits.

For the last five years the leading farm journals of this country have given more or less space to educational matter concerning farm tractors. Leading agricultural colleges and agricultural engineers after complete and exhaustive research into the economic side of tractor usage have proved without question that the salvation of the farm and the farmer rests upon time-saving farm machinery. Their deductions are based not upon conjecture or generalities, but specific facts.

When land was \$20 an acre and when horses were \$50 apiece, there was no urgent need for engines on the farm. Today land has gone up until it touches \$200, \$300, and \$400 an acre. Even ordinary horses have advanced in price until \$1000 will only buy three or four. Farm labor is constantly growing scarcer. Twenty-five

horses hitched to gang plows necessitate the attention of five men. One man on a tractor with an assistant on the plows behind will accomplish as much work.

A tractor will handle every operation on a grain farm from soil to market. It will plow, disc, sow, harrow, harvest, thresh and haul the grain. It will combine two or more operations with a great saving in power. In orchards the small tractor can be used to great advantage. It is built low-down and moves in the middle between rows of fruit trees, sparing the limbs. It will pull a wagon heavily loaded with fruit from the orchard to the railway, a carload at a trip. It takes the place of many teams and men at a time when the hand of man is needed to strip the orchard of its yield. Both in the orchard and on the larger farm the tractor can be used to furnish stationary power for any kind of task.

In the cultivation of larger tracts of land, no comparison can be drawn between tractor and horses. Here larger areas are cultivated in a much-reduced time and cultivated much better. In every operation, the tractor saves wages. Like all other useful machines the initial cost of the tractor seems comparatively large, but this cost is more than made up in the economies effected. In both extensive and intensive farming, the tractor has demonstrated its great power for saving.

The following gives a cross-section view of the diversity of uses the tractor may be successfully put to in

modern farming: "It crosses rough places in seeking its work. It fords streams where the country is new or where enlightened laws have not come to compel safe bridges; climbing mountains and freighting are one part of its daily duties. Perhaps the house or the granary needs moving or perhaps it is a load of grain for the railway. Possibly the road must be built first, perhaps even the railway; and after sawing timber for bridges and ties, the tractor must grade the embankment all the way from the farm to the flour mill.

The tractor must at times haul its entire camp—separator, plows, tools, mounted fuel tank, and the cars for eating and sleeping. Its work often begins in the snow of spring. It sometimes ends in the snow of winter. No longer, as in the simple threshing days, does its work cease a short month after the click of the harvester stops. No longer does the wasteful glory of blazing strawstacks celebrate the beginning of its long vacation. The tractioneer is busy the whole year through.

The wonderful development of farm machinery has elevated the farm laborer from a mere drudge to a skilled operator of mechanical devices. It was machinery that cheapened the cost of production.

The last three years have shown a tremendous improvement in tractor construction. Eight years ago there were only two gas tractor firms in this country. Three years ago, not more than ten. Now there are fifty, each one building an average of two types or sizes. While there is a wide difference in the various makes, a degree of

perfection has been reached that makes the gas tractor of today as efficient in its own field as the automobile is in its field. Naturally, there will always be discussion around the relative merits of tractors of different makes, but the question whether animal power or machine power is to predominate has been settled once and forever.

The fuel for operation—kerosene and distillates—is stored in enormous quantities and offers a widely distributed supply of cheap fuel for internal combustion engines. The gas engine is solving the great agricultural problems of the day and as all the larger problems of the nations hinge upon the happy solution of the agriculture problem, it is no extravagance to say that the gas tractor is holding up to mankind the greatest of all outlets to improved efficiency.

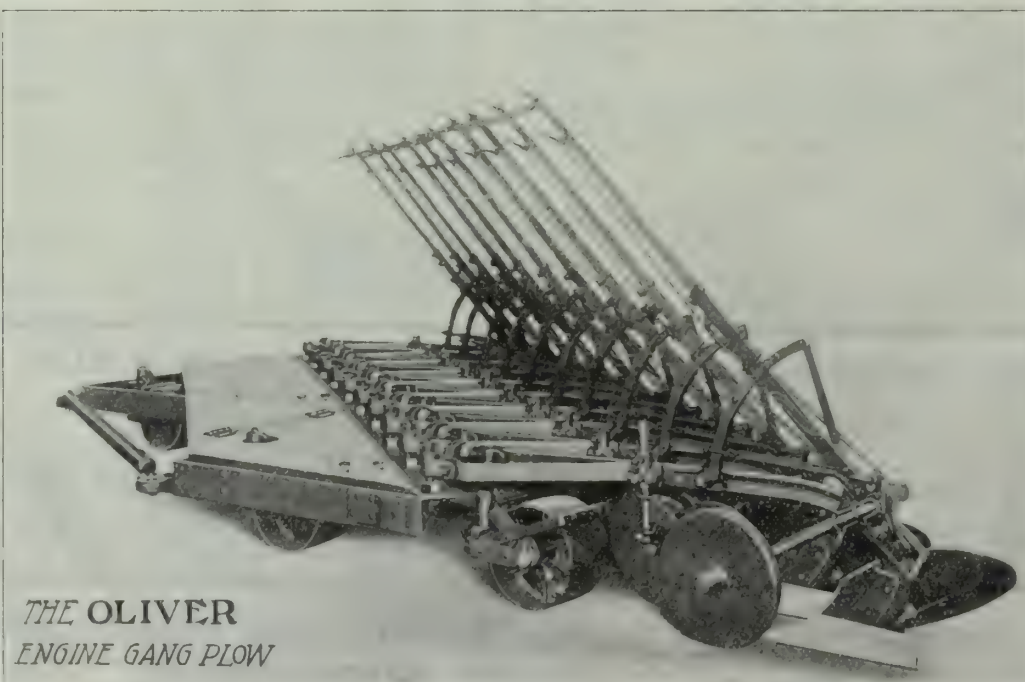
MAKING FUN OF OUR QUESTION BOOK.

To the Editor: I am just reading your book "A Thousand Questions in California Agriculture Answered." It is very interesting and instructive. I read the questions first and try to answer them. Then I see how near I come to being right. It's a dandy winter "sport."—R. W. B., Davis.

[This makes us very happy. We had no idea of putting out a popular parlor game. But we can play it better than you seem to be doing. We commend it to youth of both sexes—one of each. When the questions and answers are running freely, it will be found very easy to slip in one which is not in the book.—EDITOR.]

The Oliver Engine Gang Plow

WITHOUT
QUESTION
THE
MOST
POPULAR
AND
SUCCESSFUL
TRACTOR
PLOW
IN
CALIFORNIA.



THE OLIVER
ENGINE GANG PLOW

THE
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An Esteemed Reader Unloads His Mind.

I would like to ask you a few questions that have been on my mind for some time.

1. We have several young orange and lemon trees in the yard; they were frozen by last year's frosts, so this season I have boxed them up with trays, first piling some manure around the stumps. I mean to keep them closed up till March until danger of killing frosts are over. Do you think the long confinement in a dark place will injure them? They were shut up about December 1 and at present seem all right.

[They will probably come through in good shape, but it is not necessary to bundle them so tightly.—EDITOR.]

2. We have two acres of old Feher Szagos grapevines and wish to graft them to the Sultanina. In Prof. Wickson's book "California Fruits", he describes side-grafting, by which a scion is inserted in a cut in the stump below the ground and the top left on; thus enabling the grower to get a crop off the old vine while the graft is taking hold. Is this method as sure as the cleft-graft?

[No; it is likely to give a very irregular stand. If the crop on the old vine is worth saving perhaps you had better not graft at all.—EDITOR.]

3. In the same book a machine is mentioned that cuts the vine brush up into one-inch lengths to be plowed under. Where could I get such a machine?

[We do not know. It never came into wide use.—EDITOR.]

4. Our cow's first birth was a heifer calf and we are raising her. The neighbors tell us that the first birth never makes a good cow. How about it?

[It is not true.—EDITOR.]

5. I have an opportunity to get some blood fertilizer from a slaughter house. What is its composition? How does it compare with barnyard manure? Is it good for the garden?

[No one can tell the composition of a fertilizer without analyzing it. A good article of dried blood is worth not less than ten times as much as average stable manure, for an equal weight. It is good for the garden.—EDITOR.]

6. We have a large quantity of volunteer citrons, or pie-melons, in the vineyard and are selling them at a dollar a load. Would it be better if we allowed them to rot on the ground? What is their value as fertilizer?

[Sell them, unless you can feed them to advantage.—EDITOR.]

7. An eastern farm paper says wood ashes should not be put on as fertilizer with poultry manure. Why so?

[Because the ashes set free the nitrogen from the manure. If you get both into the soil immediately, it does not matter much.—EDITOR.]

8. We are planning to put a row of prunes along one side of our vineyard. A local nursery catalogue says the Robe de Sergeant is slightly superior to the Prune D'Agen in this locality. I read that Burbanks new "Standard" excels both, but so does the price asked for

the trees. What kind would be the best?

[The Robe is a little larger and may sell for a little more, but it is not as regular and free a bearer as the French. The Standard is still on trial. It may be best of all but we have not seen the data for it yet.—EDITOR.]

Fresno.

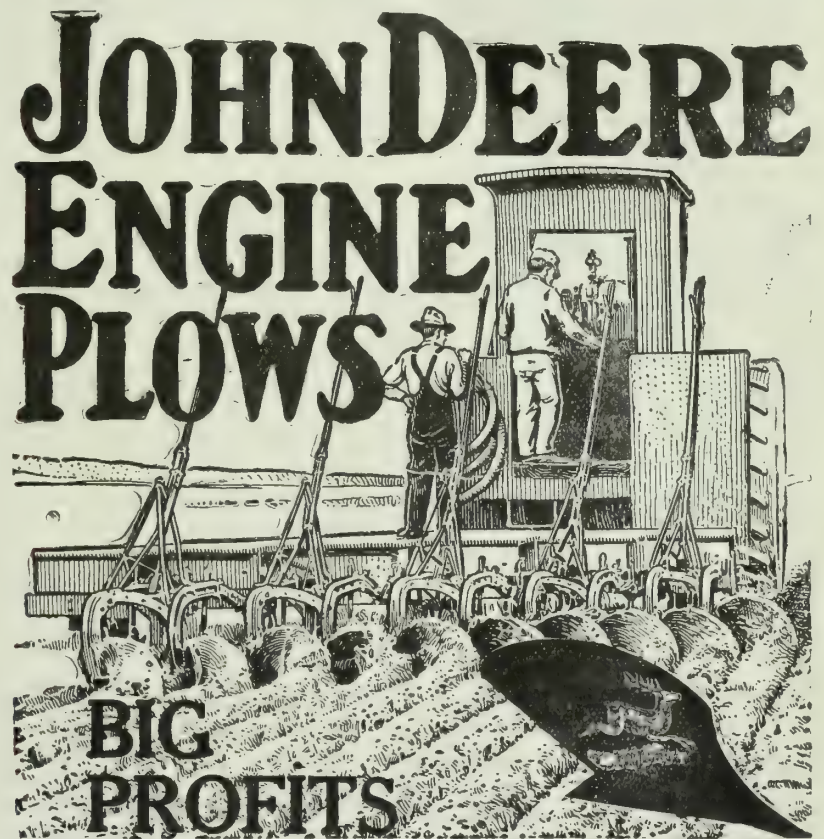
H. A. S.

DIRECT SALES OF PRODUCE.

To the Editor: Since you published my letter in your issue of January 3, I have received several communications from different producers quoting me prices on hay, most of whom open their letters by saying "why not buy

direct from the producer?" The fact is the average producer does not advertise, hence the consumer is obliged to go to the dealer or middleman. I would ask the question, "Why do not the producers advertise whether they have hay, corn, potatoes, cattle, hogs, or chickens?" They can do this singly or in clubs for a very little cost. —R. N. TUNSTALL, Geyserville.

[We know no reason why a producer should not advertise and sell his own produce if he desires to do so. If he has no time or inclination to do the merchandising alone, he can certainly operate very successfully through a producers' organization, as you suggest. Farmers can do many things for themselves which they now trust to others; the only question is "Will they do it"—and that they have to answer themselves.—EDITOR.]



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Valuable Notes on Eucalypts.

[Written for the PACIFIC RURAL PRESS by LEONARD COATES.]

It would seem time for the real, and not inflated, value of the eucalypt in California to be recognized. Enthusiasm easily drifts into exaggeration, which was the case a few years ago, culminating in the "eucalyptus boom," which was unfortunate in individual instances and which reacted unpleasantly on the reputation of the State at large. To the credit of the RURAL PRESS, that journal always took a conservative view of the situation, and uttered some warnings, which, however, were not heeded as they might have been. And no one made anything out of it except a few speculators who were shrewd enough to sell land before the bursting of the bubble.

EUCALYPTUS OF GREAT VALUE.—But the eucalyptus family will some day be considered a characteristic feature of California, just as it is in some parts of northern Africa and southern Europe, although there, as with us, an alien, it is so well adapted to existing conditions it is strange that in the natural distribution of species it had not found its way here long ago.

During the "boom" much was written and many bulletins and pamphlets issued, and if the planting public had studied more carefully the statements made by the foresters of the Department of Agriculture, some losses and disappointments would have been avoided.

THE WRITER'S EXPERIMENTS.—Our experimental planting of some 50 species extends over only seven years, and is situated in the southern end of the Santa Clara valley.

During that period there have been great climatic extremes; two winters of excessive moisture (not including the present, when Morganhill up to January 27 registers 30 inches); one of great lack of moisture, and one (1912-13) of positive drought coupled with very low temperature, the thermometer falling to 18°. In the winter of 1909-10, while the thermometer fell no lower, some of the eucalypts suffered more from the effects of frost than at any other time.

THE BEHAVIOR OF SPECIES.

Eucalyptus amygdalina is quite hardy and a beautiful, graceful growing tree, but it will not endure drought. Large trees died as a result of the extreme dryness of the subsoil last summer and fall, while they seemed to luxuriate in excessively moist seasons.

E. corynocalyx, on the other hand, flourishes under the most arid conditions, although it appreciates a reasonable amount of moisture. The drought of 1913 did not affect this species at all, but in 1910 it was very badly hurt by frost, the tops being killed, and often the entire trunk being split open. As an example of ability to recuperate, it certainly is a marvel, trees that were condemned as only fit for the woodpile throwing out shoots in the spring from an apparently dead trunk; these same trees now having formed new and dense heads, 20 to 30 ft. high, and are among the handsomest of the collection. The frost of 1912-13 did not hurt them at all, though equally severe.

E. calophylla has large, leathery leaves, and var. *rosea* is sometimes confounded with *E. ficifolia*—though, being hardier, it will be generally more useful.

E. citriodora has leaves, at first hairy, that are scented like the lemon-scented verbenia (*aloysia*). It will not stand much frost, but, for its exquisite fragrance, might well be kept in a pot or tub for a few years, in the conservatory or other sheltered place.

E. crebra is an "iron-bark," small, graceful leaves, and most profuse bloomer. It is quite hardy, and makes a beautiful tree; it stands extremes well.

E. diversicolor makes a very fine tree, but needs plenty of moisture. It endures as much frost as *corynocalyx*, but would not live in a soil that becomes too dry. The leaves take on a beautiful bronze tint in the early winter.

E. ficifolia is the handsomest flowering species, by far; its deep crimson stamens forming a gorgeous sight; but it is apt to be killed to the ground during successive severe frosts which occur once in a decade or so. It should be planted extensively where it succeeds, as blooming sprays are much in demand in San Francisco. While it thrives in mild localities near the coast, it rejoices in plenty of sunshine. Our trees planted in the open, and about 8 feet high, were killed in the frost that seemed to have destroyed *corynocalyx*.

E. globulus, or "blue gum," is the one most widely known, and in spite of the devastating effect in some places following the freeze of 1912-13, it is still the most widely called for. It is still the most useful for all purposes except for street planting or for planting near dwellings, or in any circumscribed or restricted area; it grows well in a great variety of soils.

E. goniocalyx has a similar habit, and is even less harmed by frost.

E. Gunnii is extremely hardy, wiry, and tough; not a strong grower.

E. Lehmanni has very large white flowers, and good foliage. The young

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trees are rather tender, but it should stand conditions similar to those which are congenial to diversicolor.

E. polyanthema is remarkably hardy and is about as drought-resisting as *corynocalyx*. Foliage is a pale, blue-green, roundish in shape, and the tree blooms young, and very freely.

E. robusta is not very robust, as it should be kept well pruned to prevent branches breaking off, the wood being brittle. Leaves are very long, and flowers large and creamy white. It grows well in very moist soils, and stands several degrees of frost.

E. rostrata is as hardy as any, and a very safe tree to plant in large quantities for wood or timber. While it will live in quite dry soils, it really needs plenty of root moisture. The eucalypts are just as responsive to good treatment and sufficient moisture as any other tree.

E. rudis holds its own well; it is a good grower, perfectly hardy, and does well in wet or even quite dry soils; it will stand more alkali than most others; it is a good bloomer, and if kept pruned while young, forms a good round head.

E. saligna is another very useful tree, growing very straight and symmetrical; the leaves are more than usually glossy.

E. sideroxylon-rosea is a sub-variety with very graceful foliage and pink flowers; hardy, and one of the most ornamental.

E. tereticornis is one of the hardy sorts useful for wood and timber, and, like *rostrata* and *globulus*, should be planted on every farm as a plantation for future use. According to scientists who have studied the situation, unless some pretty universal forest tree planting (and all who own land may help) coupled with deeper tillage of the soil, the United States may become a desert in fifty years. There is plenty of talk about water conservation, but very little action.

E. urnigera. This is classed as an Alpine species. Here it grows very straight, and one of the best 'wind resisters'; perhaps from its experience in withstanding the effect of mountain storms.

E. viminalis is very tall growing and quite hardy. Perhaps the best tree for effect in wide avenues or where plenty of room is given in the interior valley.

I have not mentioned many others we have growing, or those that are not a success generally. Except for the collector, botanist, or for those

who are experimenting to determine the most generally useful species, it is hardly worth while to add to the list, as all here described may be depended upon, either for economic or more strictly ornamental purposes.

There is no doubt whatever that the eucalyptus family is destined to play an important part in the future resources of California. Remove from its history all element of exaggeration, and what other tree, or family of trees, can compare to it in its great and undeveloped field of usefulness in California, where it finds a congenial home?

Morganhill.

HARD WOOD ASHES AS A FERTILIZER.

Common hard wood ashes have a value of about \$5 in plant food, and \$3.50 in lime, according to investigations made by Professor H. V. Tartar, agricultural chemist of the Oregon Agricultural College. Their physical effect on the packed and acid soils of certain districts is also very beneficial. The almost prohibitive high price of lime to correct soil acidity should lead the Willamette Valley farmer to use ashes extensively for that purpose.

"Wood ashes are valuable fertilizers for three reasons," said Professor Tartar: "For the valuable plant foods they contain, for their effect in neutralizing acids in soils, and for their action on the physical properties of the soil.

"The plant foods in ashes are potash, phosphorous and lime. An analysis of 97 samples of hard wood ashes gave the amount of each as follows: Potash, 110 pounds per ton; phosphorous, 38 pounds per ton; and lime, 682 pounds per ton.

In order to get this value from ashes it is necessary that they be protected from rain, as most of the potash is soluble in water and is lost by exposure. After leaching, the potash content of ashes was found to be 22 pounds per ton. The ashes should be stored in a dry place until applied to the soil.

"On soils that are poorly drained and acid, ashes have an excellent effect. The land becomes more amenable to culture, is readily kept in good tilth, retaining its moisture in dry seasons and favoring drainage in wet seasons."

An effort is being made to start a creamery in the Perris valley.

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Constructive Agriculture—No. 7.

The Tractor as a Factor in the New Farming.

[Now that a great tractor demonstration is on in California it will be interesting to readers to have an outline of another affair of the same kind which filled a whole week at Fremont, Nebraska, beginning on the 8th of September, 1913. We judge it was the greatest demonstrator of tractor operation ever held and seems to have been conducted with great satisfaction throughout. The account which we give below is compiled chiefly from several reports from which we naturally eliminate local and personal points, striving to sketch a picture of broad significance concerning tractors as a class of agricultural implements and the character of their work. Their constructive influence in shaping the newer farming business of the future cannot yet be definitely estimated or described, but it is clear enough that it will be very great.—EDITOR.]

THE SCENE.—The air was filled with the pop-pop-pop of the mighty kerosene burning tractors, pulling behind them the leviathan plows and the field was filled with spectators as the gas-power plowing demonstration conducted by the Twentieth Century Farmer and the Fremont Commercial Club opened at Fremont, Neb., September 8th. More than forty of the gigantic machines, made by a score of different manufacturers pulled across the stubble in this, the greatest power-plowing demonstrations ever witnessed at any place in the world, and before the week had closed almost 500 acres of land had been turned and made ready for the seed drill.

It was a demonstration of the utility of power plows on the farm, not particularly on the mammoth wheat farms of the northwestern prairies, but on the ordinary farm of the Missouri river valley, and it accomplished its purpose and more. People came from far and near; on foot and in automobiles; and

at one time it was estimated almost 1000 automobiles were on the grounds.

EDUCATIONAL, NOT COMMERCIAL.—While it was a demonstration of power plowing, it also demonstrated the widespread interest in this new source of power for the most laborious of all farm operations. There was nothing about the show in the way of a contest. There was nothing about it to determine the relative efficiency of each of the machines. Each spectator was at perfect liberty to draw his own conclusions as to what machine would be most suitable for his particular purpose, and the demonstrators accompanying each machine were very cheerful in showing the thoroughness with which his engine could do the work required.

We have reached an age in which internal combustion engines are rapidly supplementing horse flesh as the source of convenient power on the farm, and from the multitude of sizes, shapes and manipulation of the tractors in this Nebraska show, there is a tractor for almost every need. It almost seemed that there was a tractor in this show for every farm operation, except a corn cultivator, and yet only a small number of manufacturers were represented. But, in any event, there were enough to demonstrate the possibilities of gas power for plowing and many acres of Missouri valley land will be turned with these herculean machines within another year, as a result of this demonstration.

THE PLOWING.—It is not at all easy to turn the tough, gumbo soil on which this demonstration was held, even when the soil is in the most favorable condition. But at the time of this show, following the longest, driest and hottest period that section of the country had ever known, the soil was in such condition as to test to the utmost the strength of these big machines. Five hundred acres were available. Some of this land had been in cultivation for a number of years, while something over a hundred acres was virgin, slough grass sod. But to the powerful tractor it seemed as soft as cheese. According to their strength, the machines left in their wake from four to a dozen big black ribbons of gumbo without a trace of moisture except at the bottoms of the deepest furrows.

Such land tested the strength of some of these machines, but each one plowed its allotted land each afternoon with apparent ease; then purred its way across the field to the area in which the machines were quartered.

THE SIGNIFICANCE OF IT.—But what of it all? It demonstrated the efficacy of the new source of power, and its application to the modern needs of agriculture. The old methods of handling the soil are inadequate; greater areas of land must be stirred; the soil must be worked to greater depths; the expense of producing crops must be lowered. Gas power is paving the way to these ends.

The cultivation of the soil in regions of small rainfall has shown the importance of deeper plowing and storing in the soil more of the annual precipitation. The cultivation of greater areas of wheat has brought about an increased need of more serviceable and cheaper power than horses for stirring the soil, and in this demonstration,

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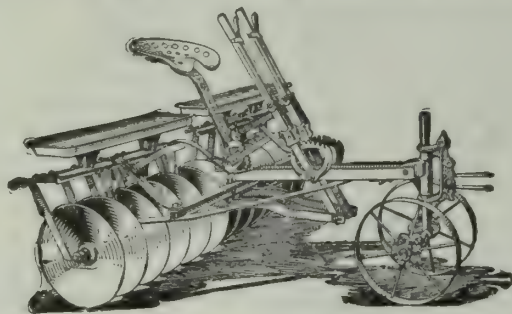
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THIS year ten disk harrows will be sold where one was sold five years ago. Why? Because so many farmers have learned that the proper use of a disk harrow is the best guarantee of a successful crop.

Proper use of a disk harrow means the purchase of an I H C disk harrow because they are the ones built to do the best work. The frames are strong, to stand the strain of following the binder or of slicing meadows. The set levers keep the gangs to their work at even depth. The bearings are the most durable that can be put on a disk harrow.

The full line includes disk, peg tooth, and smoothing harrows, drills and cultivators. See this line before you buy. We send catalogues on request.

"The Disk Harrow," a book which illustrates and explains the proper preparation of a seed bed, and gives examples of the value of disking—32 pages of valuable information—is yours for four cents to cover postage and packing.

International Harvester Company of America (Incorporated)

Denver—Helena—Portland—Spokane—Salt Lake City—San Francisco
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WHY NOT INCREASE YOUR



Alfalfa Crop

You can by using \$2.00 worth of Mococo Superphosphate per acre. It will increase your yield anywhere from one ton to four tons per acre. The richest phosphorus fertilizer on the market. Write for booklet giving testimonials.

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Fruit Trees! Fruit Trees!

Fruit and Nut Trees, Ornamental, Evergreen and Deciduous! Shade Trees, Berries, Grape Vines, Flowering Shrubs, Palms and Roses. The best that care and experience can produce.

Northern California Grown

Write and get our prices. You will find them as reasonable as any, considering the quality. Remember a cheap tree is dear at any price.

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Phone 170.

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MARTINEZ NURSERY

ESTABLISHED 1884.

Offers the following varieties in strictly No. 1 Trees: 25,000 Bartlett Pear, 10,000 Apple (leading varieties), Autumn and Winter Pear, also Plum, Prune, Peach, Apricot and Almond Trees, Grape Vines, Ornamentals, etc. Price List on application.

THOS. S. DUANE, Prop.

MARTINEZ, CAL.

HALF MILLION SEED BED STOCK FLORIDA SOUR ORANGES AND GRAPE FRUIT

Strong, thrifty one-year-old stock, eight inches and up.

Also fine line pedigree stock of Eureka Lemon, Navels, Valencia, Marsh Seedless Grape Fruit and Mission Olives.

T. J. WALKER NURSERIES, San Fernando, Cal.
(Established 1895)

spectators had the opportunity of witnessing a mammoth engine pulling a gang of eight plows, a double-disk harrow, soil packer and grain drill; plowing, harrowing, packing and seeding the land at one operation.

THE OLD TRACTORS AND THE NEW.—Power plowing is gaining in popularity, because it fills a demand. There is a limit to the strength of horses, and with the heavy losses of these animals in parts of Kansas and Nebraska last summer, and the terrible strain put upon them by the heat and drouth of the present summer has increased the demand for the "iron Percheron." But just as in the case of the automobile, tractors are going through an evolution in which the massiveness of the machines is being reduced, as well as the price, to make them serviceable for a greater variety of purposes.

Steam tractors are old, but the gas tractor is new. Like the automobile, there are a hundred needs where there is but one machine to supply the demand. The range of usefulness of the machines is being extended, and where a few years ago there was no gas tractor which was in the least suitable for the use of the orchardist, today there are several which well serve the purpose of pulling plows, harrows and spraying machines through even the hilliest of orchards.

TRACTORS AND TEAMS.—But not only is the range of usefulness of these machines being extended, but the matter of fuel supply is being simplified by equipping them so that they will burn kerosene, gasoline or distillate. Then the question of cost of maintenance during work and idleness is being reduced, and it is no longer such a serious question whether enough horses are to be kept in idleness during the

winter to perform the work that will be demanded of them the following summer, except on the smaller farms. The gas tractor is tireless and can run twenty-four hours a day and be just as fresh at the end of the time as it was at the beginning.

During the past summer a Nebraska farmer operated his gas power tractor through 192 continuous hours of plowing, without stopping even so long as to replenish the supply of oil and fuel. When the machine had finished its job it was none the worse for its long run, but where would quivering horse flesh have been, under such a long strain? Even had this farmer had sufficient horses to have pulled an equal number of plows over an equally long number of hours, their cost of upkeep, feed, veterinary and depreciation would have been far greater than the cost of a whole fleet of tractors. With horses the expense begins when they rest; with tractors the expense ends when they quit work.

HOW BIG A FARM FOR A TRACTOR?—The best power farming experts do not advocate the purchase of tractor by every farmer with 40 acres and a mule, unless there is considerable custom work to be obtained in the community; but on good farms of 100 acres or more they are profitable for all work done by horses and for several important tasks which horses so far have never been able to do.

Veterans of the "good old days," when they see a tractor eat up a pile of wood, are convinced that no cross-cut saw was ever like that; and the farmer who has a silo to fill or a thresher to run cannot get along economically without one. On the whole, a tractor-farmer is unique from his neighbor in that he is independent—he can have his own water works system, his own electric light plant, his own irrigation power, and his own threshing outfit.

TRACTORS REQUIRE CARE.—Such a power plant is everybody's friend, except the man who owns one and abuses it. More money has been wasted in neglecting farm machines than has been spent in running them. An oil engine is no longer a complicated affair, no more so than a sewing machine. It is easy to run and easy to understand, but, unlike an over-worked or under-fed horse, nature does not step in and rebuild the damage caused by man's carelessness. It takes a mechanic to do that, and mechanics cost money. Only last week, while passing a big fruit farm near Detroit, the writer saw a beautiful new Mogul oil-burning engine in one corner of the field and the plow in another corner.

To all appearances that was to be their abiding place until the next job came along. This farmer would not treat his automobile that way, a purely pleasure vehicle with no dividend bringing power. Why he should be less kind to the investment which potentially had greater interest earning possibilities than any other thing he could buy is a mystery. He ignored the fact which all factory owners discover sooner or later—that machinery which will work for years and years when protected and oiled will become useless in a season when the plant is unoccupied or closed down.

The average tractor is built sturdy and strong. It is braced and reinforced to do the work for which it is designed, and in proper hands it will soon pay for itself and make money for its owner.



"Fine Piece of Alfalfa, Isn't It?"

"That goes to show what a little dynamite and a little common sense will do. Only a couple of years ago you couldn't get anything to grow here but swamp grass, puddles and mosquitos. A little

Hercules Dynamite

a big drainage ditch, and—a worthless swamp changed into as fine a bit of grassland as you'd care to see.

"Hercules Dynamite is a quicker, cheaper, better way than the old pick and spade method. That's why I use Hercules."

Write for free booklet on "Progressive Cultivation" and learn why it pays to use dynamite.

HERCULES POWDER CO.

Chronicle Building

San Francisco, Cal.

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NATURE GROWN TREES

ONE, TWO AND THREE YEAR OLD

FRED. L. BORUFF, San Fernando, Cal.

25,000 Eureka Lemons and Valencia Lates

There is no better one and two-year stock in the State. Our stock has never been touched by frost. A few Perfection Placencia Walnuts on Black Roots.

MRS. A. G. WALTERS, R 3, Box 1, Anaheim, Cal.
Four blocks east of Santa Fe Depot on East Center St.

LIME NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of Lime

Send for Free Booklet and Prices

PACIFIC LIME AND PLASTER CO.,

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300,000 FIRST-CLASS ORANGE SEED BED STOCK.

Ready for delivery. Genuine Florida Sour Stock. Sweet Stock grown from carefully selected California seed. Clean, vigorous and thrifty. Correspondence solicited.

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C. H. HARLE, Mgr.

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Sempervirens Cactus Farm

JOHN ZUUR, Prop., Santa Rosa, Cal.

Ask for 1914 Catalogue.

F. H. WILSON, President.
CHAS. A. CHAMBERS, Secretary

The **Fresno**
Nursery Co. Inc.

For Years

California Fruit Planters have considered our firm one of the Most Reliable Concerns to deal with. Headquarters for

FRUIT Trees—

All Kinds.

GRAPE Vines—

All Varieties.

Send your list of wants for quotations. Price List and Information Free. Our Stock Guaranteed

"From the Roots Up."

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DATE GROWING

Just issued—a complete treatise on Date Growing; 300 pages, 40 illustrations. The only book published which gives a full, clear and practical account of growing the Date Palm. \$2.00, postage 16c.

WEST INDIA GARDENS,
Altadena, California.



ORNAMENTAL AND FRUIT Plant Now!

The season for planting is right here—so whatever you do, don't delay ordering the stock you expect to set out this year. Everything points to an enormous planting season, and we are being fairly swamped with orders. Fortunately we have this year the most magnificent assortment of both fruit and ornamental stock that we have ever grown—but to make sure of getting what you want we advise your getting in touch with us at once.

Below we mention just a few of the varieties we can supply in almost any quantity. Remember, we grow over 2000 varieties of trees and plants, so the following are merely hints:

APRICOTS
Blenheim Royal Tilton
on Apricot and Myrobalan Root
FREESTONE PEACHES
Muir Lovell Elberta Foster

PEARS
Bartlett Winter Nellis P. Barry
Winter Bartlett

OLIVES
A Magnificent Stock of Mission and Manzanillo Ask for Quotations

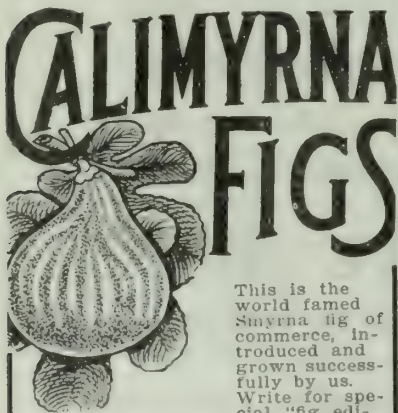
APPLES
Delicious King David Rome Beauty Staymen's Winesap, etc.

ALMONDS
Drake's Seedling IXL Nonparell Ne Plus Ultra Peerless, etc.

NECTARINES
A Fruit for the Epicure. We offer Stanwick, Humboldt and Advance, the three leading varieties.

GRAPE
Table Wine Raisin

WALNUTS
We are the most extensive growers of grafted walnuts in California. We have a magnificent stock of Mayette, Franquette, Parisienne, Chaberte, etc.



This is the world famed Smyrna fig of commerce, introduced and grown successfully by us. Write for special "fig edition" or "Roedings Practical Horticulture. Just out. Will be sent free upon request.

It makes little difference what you may wish—we can supply you. All stock guaranteed TRUE TO NAME and will be shipped in first class condition.

Note a few of the splendid ORNAMENTAL trees, vines, etc., that we offer.

MAGNOLIA
Superb specimens of the best varieties.

CEDRUS DEODARA
The most rapid growing of all cedars. We have a fine assortment of sizes.

ITALIAN CYPRESS.
All sizes in tubs and boxes and balled.

Palms
Our stock of palms cannot be excelled. Ask us for special quotations. We have a fine stock of Chamerops Excelsa (windmill palm), Chamerops Humilis (Dwarf-growing fan palm), Cocos Australis (Pindo palm), Erythea Armata (blue palm), Washingtonia Filifera, and Washingtonia Robusta.

ROSES
We have the finest assortment of hardy, field grown roses we have ever offered.

Illustrated Catalogue—Free
Lists and prices all varieties grown by us in both fruit and ornamental stock. A copy will be sent free upon request to any address.

PAID UP CAPITAL \$200,000
FANCHER CREEK NURSERIES
GEO. C. ROEDING-PRES. AND MGR.
Box 18, Fresno, California

Two New Books on Plant Diseases.

To the Editor: Two books on plant diseases have recently appeared in which some readers of the PACIFIC RURAL PRESS might be interested. The first to reach me is by Professor F. L. Stevens, now Dean of the College of Agriculture of Porto Rico, and is entitled "The Fungi Which Cause Plant Disease" (Macmillan & Co., \$4). This is not a book on the diseases of plants, but is, as the title indicates, on those fungi which attack plants. Incidentally, it also takes up a considerable number which do not cause disease. It does not describe sick plants nor treat of remedies, as this was done in a previous book by Professor Stevens and Professor Hall.

The present book is a compact, concise treatise of 754 pages of technical descriptions and with 449 illustrations. It appears to be very complete, at least for North America, and will be particularly welcomed by specialists because it brings together many data which could not be found in a single volume, nor in many volumes without consulting various languages. While the matter is technical it is not unduly difficult. It is furnished with a glossary of terms and anyone with a little training in the study of fungi should be able to use the book. It is of especial value, also, for the splendid bibliographies which it contains, and is a most valuable work.

The second book is "The Diseases of Tropical Plants" (Macmillan & Co., \$2.75) by Melville Thurston Cook, Ph. D., professor of plant pathology in Rutgers College, New Brunswick, N. J., who was the first plant pathologist in the Cuban agricultural experiment station. This is a very attractive book of 317 pages and 85 excellent illustrations. It is written expressly for the planter but will prove of very real interest and value to the specialist as well. It takes up a discussion of the nature and symptoms of disease, treats of the structure and functions of plants, gives a classification of fungi, and discusses other causes of plant disease. Then there follows a discussion of the diseases of specific tropical crops, such as sugar cane, corn, rice, cotton, citrus fruits, pineapple, banana, avocado, tobacco, coffee, tea, chocolate, etc.

A few matters are already out of date, as the part on wither tip of lime, which Mr. Clausen at Berkeley has shown to be due to a different fungus from that to which it had been ascribed. Also, since this book was written, we have found at least one of the principal methods for the spreading of olive knot. The discussion of citrus gummosis, too, is somewhat different than it would be if the manuscript were being prepared at the present moment. This book should be of especial interest to those of the university students who are looking forward to agricultural work in the tropics. WM. T. HORNE.

University of California, Berkeley.

NO INCOME TAX ON IRRIGATION BONDS.

Members of the Irrigation Districts Association of California to the number of forty have formulated a telegram to the Secretary of the Treasury asking that he give no decision on the liability of holders of irrigation district bonds for the income tax until a committee could appear before him and argue the question. The associa-

tion holds that irrigation bonds should be exempt from income tax provisions, as are state and municipal bonds, inasmuch as irrigation districts are political subdivisions of the state.

Some time ago the secretary took the question under advisement, and the request telegraphed is for further postponement until the position of the

Irrigation districts can be explained to him.

At the meeting also a committee was appointed to bring before the Internal Waterways Congress today the position of the irrigationists in regard to waterways. On this committee are P. H. Griffin of Modesto, A. L. Cowell, former executive secretary of the association; L. L. Dennett, attorney of the Southern San Joaquin Irrigation District Association; Burton Smith of the

San Dimas Citrus Nurseries

A Splendid Year For Planting Citrus Trees

Everything points to a year of unexampled prosperity for growers of citrus fruits. Climatic conditions certainly could not be much improved. A splendid growing season seems to be absolutely certain. There is probably no industry in southern California that has paid so well, one year with another, as citrus culture. Ask any banker in any citrus section what he thinks of the return on oranges and lemons. But greater profits are yet to be made. The mistakes of the past are being corrected, and growers are learning that it pays to plant only the very best quality of trees.

PLANT TEAGUE TREES FOR PROFIT

—because they are started right, grown right and shipped right. We have had 24 years of experience in growing citrus trees exclusively, and can supply you with all the standard sorts in almost any quantity—oranges, lemons, pomelos—free from scale—true to name.

Our handsomely illustrated book "Citrus Fruits" covering the industry from seed to market, will be mailed to any address for 25c in stamps. Write for quotations and suggestions.

San Dimas Citrus Nurseries, Inc.

Established in 1890 by R. M. Teague
SAN DIMAS, CALIFORNIA, U. S. A.

Manzanillo Olives Mission Olives

I have a magnificent stock of these two olives.
Clean, well grown, thrifty trees, true to name.

LET ME QUOTE YOU PRICES

Write me what your requirements are, stating conditions, and I will gladly give you the benefit of my suggestions and experience. I believe I can help you in deciding WHAT, HOW, WHEN, and WHERE to plant.

PLANTERS GUIDE FREE

This is not a mere catalog—it describes my complete stock for California planting, giving pictures and cultural notes which are of great value as they are the result of my 25 years' experience in the Nursery business in Ontario, California.

Armstrong Nurseries

JOHN S. ARMSTRONG, Proprietor
420 North Euclid Avenue ONTARIO, CAL.

FRESH HORSE MANURE

As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

COW MANURE.

SHEEP MANURE.

PACIFIC MANURE AND FERTILIZER CO.,
429 DAVIS STREET, SAN FRANCISCO, CAL.

Turlock District Association; George L. Dillman, chief engineer of Oakdale Irrigation District, and W. A. Patterson, president of the association, of Oakdale.

"There is no need for waterways or navigable streams unless there is

something to carry on these waters," said Griffin last night. "Give us water for irrigation first, then there will be products for freight. Eighty per cent of the water used for irrigation will seep back into the rivers, and they will be navigable all the time.

Tractor Plowing Demonstrated.

The demonstration of farm traction engines which will take place on the Bullard ranch near Fresno on February 19, 20 and 21 is an event that should prove not only of great interest to every farmer for what he will see, but for the economic suggestions that must come in a demonstration of a class of machinery which is sure to revolutionize the farm methods, present and future.

demonstrations of all classes of tractors. Afternoon: Demonstrations of orchard and vineyard tractors in actual work.

Saturday, Feb. 21.—Forenoon: Private demonstrations of all classes of tractors. Afternoon: Demonstrations of actual farm work by the large classes of tractors.

Prof. F. L. Peterson, Chief of the Division of Farm Mechanics at the



Lambert Tractor Plowing in a Lemon Grove.

According to the estimates, 25 different machines representing the leading types of tractors manufactured in this country will take part. There will be no contests, each machine performing its work under actual farm conditions. In addition to the tractor demonstration, there will be a series of tests performed by different types of plows, cultivators, and cultivating machinery drawn by tractors. The program outlined is as follows:

Thursday, Feb. 19.—Forenoon: Assembly demonstrations of both the heavy and the light tractors. Afternoon: Private demonstrations of all classes of tractors.

Friday, Feb. 20.—Forenoon: Private

University of California, will head the committee of three in charge of the demonstrations. This committee will act as a surety of fairness as to the quantity and quality of work performed by the participating tractors.

Demonstrations of this character are of particular value because they present just the evidence that the farmer needs before conviction can be secured. For a man to introduce new methods in farming, he needs, as a rule, something visual and tangible. He must know that his neighbor is profiting by the use of new machinery, or he must see the new machine in action.

In order that the demonstration

should be well attended, a reduction in railroad rates has been secured, round-trip tickets from all San Joa-

quin valley points during the three days being purchasable for a fare and one-third.

MATHEWS Orchard Cultivator

The result of 28 years' experience in making and selling orchard cultivators that are particularly adapted to California conditions.



THIS Cultivator will do everything we claim for it. It is simple and strong—yet has so few parts that it is a "light weight." Two horses pull it easily, yet it will not spring if four horses are used.

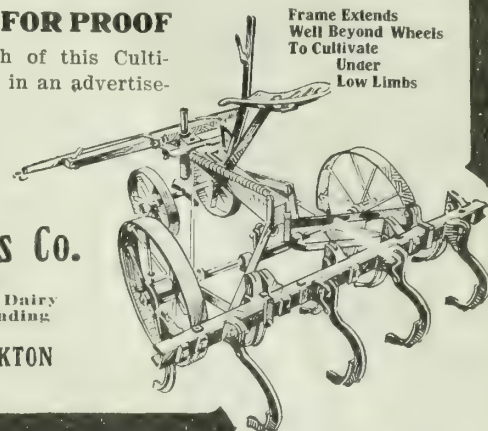
Teeth can be easily adjusted to right pitch and held there. Low straight pull. Great clearance. Lever cannot touch tree limbs. A boy can use the lift.

WRITE OR CALL FOR PROOF

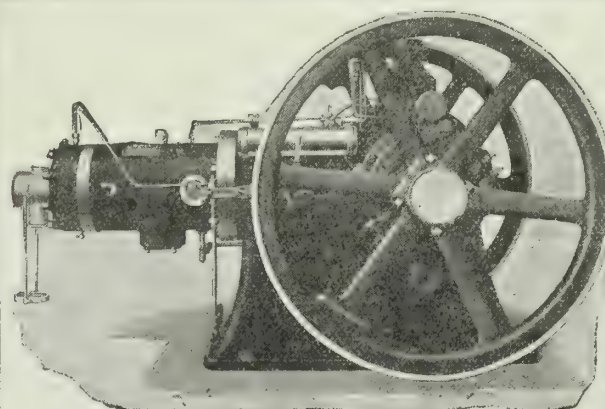
of the exceptional worth of this Cultivator. We can say little in an advertisement—but will welcome the opportunity of showing it to you or sending you further information.

Newell Mathews Co.

Established 1886
Implements, Wagons, Dairy
Supplies, Road and Grading
Machinery.
LOS ANGELES—STOCKTON
California



Frame Extends Well Beyond Wheels To Cultivate Under Low Limbs



Muncie Oil Engine

10 to 100 H. P.

The only engine in these sizes, successfully operating today in California, on California fuel oil.

The Muncie runs whenever and wherever you want it to run. It has extra large bearings, which are enclosed. No carburetors, battery, coil, magneto, gear, or cam. The Muncie has only two essential attach-

ments—the governor and the fuel pump.

The Muncie holds the record for turning over, without stopping, 42,120,000 times—without carbonizing, repairs, adjustment or breakage.

Don't let the failures of other so-called oil engines prevent your full investigation of the Muncie. The Muncie is now giving steady, sturdy, and economical service throughout California

Let us give you the name of a Muncie user in your locality.

Catalogue Upon Request

California Hydraulic Engineering and Supply Co.

68 Fremont St. San Francisco



EUREKA HARNESS OIL

MICA AXLE GREASE

Standard Stable Products made by the

Standard Oil Company

SAN FRANCISCO (CALIFORNIA) SAN FRANCISCO

ROCHE HARBOR LIME

excels all other for Spraying. Free from grit. Will not precipitate while in solution. Will not wash off when applied. Universally used for all purposes. Handled by all dealers.

Tacoma & Roche Harbor Lime Co.

Monadnock Bldg.

San Francisco, Cal.

Irrigation Helps Grain Farmer.

Although the common opinion is that our lands have fallen off greatly in fertility for grain farming, recent experiments at the University Farm at Davis by the Irrigation Investigations of the U. S. Department of Agriculture co-operating with the State Engineering Department and the California Agricultural Experiment Station, indicate that with a little irrigation California grain land will produce as well as it ever did, while without irrigation it will often fall off to be very little profitable. In other words, it may more than pay to irrigate something besides alfalfa and fruit, and the water that does good in one place will do good in another. Irrigation has done great things for California, and every bit that can be done without overdoing it should be done.

Since 1908 the area where the experiments were conducted has each

season been winter-plowed and seeded to grain in the early spring, following as nearly as possible neighboring grain farmers as to time and depth of plowing, seeding, etc. Prior to 1908 the area was a part of a large grain ranch and had been continuously in grain for a number of years.

During 1910 this land yielded at the rate of 1160 lbs. of barley per acre; in 1911, 920 lbs. per acre was produced, and 1912 the yield fell off to 345 lbs. per acre. September 21, 1912, one-half of this area was measured off and irrigated to a depth of 12 inches. In this irrigation the land was not leveled, the water being applied by flooding from contour furrows.

As soon as the land was sufficiently dry it was plowed to a depth of 8 inches, harrowed, allowed to lie until October 19, when it was disced and seeded to barley. The rainfall during the winter following amounted to 7.62 inches.

No further attention was given this area until it was harvested on May 20, 1913, when it yielded at the rate of 3306 lbs. or 35.5 sacks per acre.

The adjacent area without fall irrigation was plowed, harrowed, and seeded on January 30, 1913, and yielded when harvested 448 lbs. or 5.5 sacks per acre.

This increased yield of 2858 lbs. per acre, resulting in an increased profit of \$34.30, was produced at an additional cost of but \$2.35 per acre for furrowing and irrigation and of \$1.75 per acre for disking and harrowing before seeding.

UNTHRIFTY ENGLISH HOLLY.

To the Editor: I have a friend here who has some holly trees, and some of them have begun to turn brown and drop off all their leaves, and apparently they are suffering from some sort of blight or insect pest. These trees have not been sprayed for the past two years and therefore it cannot be that that is affecting them. The leaves drop off first and then the stalk seems to wither up. As I have a number of these trees, I am anxious to prevent any similar occurrence in my garden. Would it be possible for you to ascertain the cause of this trouble, and what steps should be taken to prevent it?—L. A., Portland, Oregon.

[The specimen which you send has a scale insect on it (polvinaria floccifera), but the numbers of this insect present cannot account for the unthrift of the plant. We apprehend that the trouble is in the root, which generally manifests itself by dying back of branches and failure of leaves in the way you describe. It is common observation on the English holly that it does not thrive with too much prosperity. It seems to grow better in a rather hard situation. Too much water or too much manure might bring the roots into distress. Such amount of water as would keep grass in fine condition would probably injure a holly tree, unless the situation was thoroughly well drained so that no accumulation would occur. We have two English books on plant diseases. Neither mention anything as affecting the holly, which certainly warrants the inference that it is a very healthy plant in places where soil, water, etc., agree with it.—EDITOR.]

25 YEARS EXPERIENCE IS REPRESENTED IN A SELECT STOCK OF 50,000

CHOICE CLEAN CLASSY CITRUS TREES

All the leading varieties, buds taken from our own tested orchards. Send for Catalog and price list.

POLLARD BROS.
South Pasadena, Cal.



Send \$5.00 for six Luther Burbank Myers Spineless Cactus and we send free, three fruiting varieties (red, yellow and white). The MYERS—an absolutely guaranteed spineless variety. These nine slabs should produce one hundred and fifty slabs in 12 months. Spineless Cactus—the wonder plant—food for man and beast, a green forage for cows, chickens and hogs; 100 tons to the acre of forage or 5 tons of table fruit. Circular free. Agents wanted.

MYERS CACTUS GARDENS,
Dept. E, 315 So Hill St., Los Angeles, Cal.

CITRUS, DECIDUOUS, WAL- NUT AND ORNAMENTAL TREES

Roses and Shrubbery
Oranges, Sour and Sweet
Seed bed stock.

GEO. M. KETSCHER'S NURSERIES,
Cor. Second and Main Sts.,
Santa Ana, Cal.

CALIFORNIA NATIVE PLANTS

Write for my new price list of California Native Plants, containing fifty-eight choice species, all of which are worthy of a place in any garden.

THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

"THERE IS A REX FOR EVERY ORCHARD TROUBLE"
REX LIME AND SULPHUR SOLUTION
REX ARSENATE OF LEAD
REX MISCIBLE CRUDE OILS
REX MISCIBLE DISTILLATES
REX PHENOLS—REX SOAP STOCK

"THERE IS A REX FOR EVERY ORCHARD TROUBLE"

The Rex Sprays are the perfection of more years of practical experience than any line of Spray Materials on the market and are kept abreast of the times by the use of the best quality of ingredients that can be bought and being processed by the best science and skill that money will hire.

WHEN YOU USE REX YOU USE THE BEST

WE SPECIALIZE—MAKE—SELL SPRAY MATERIALS ONLY—WE HAVE NO SIDE LINES.

YOUR RESULTS DETERMINE OUR SUCCESS.

IN REX SPRAY MATERIALS YOU GET QUALITY FIRST AND PRICE TO CORRESPOND—NOT PRICE FIRST AND QUALITY ACCORDING. OUR DEPARTMENT OF INSECT CONTROL WILL ADVISE YOU.

WRITE US.

California Rex Spray Co.
Benicia, Calif.

Now is the Time
To Plant

TREES

Millions
of Dollars

are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

A Splendid Income

provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection. Call and talk it over with us, or write for our 1913-14 catalogue.

Smyrna Park Nurseries, Inc., Ceres, Calif.



OUR NINE MONTHS OLD
Orange, Lemon and Marsh Seedless Grape Fruit, the finest in the State, average 5/8 to 3/4 inch at the present time.

Our buds were taken from orchards that produce almost two thousand dollars an acre. A complete line of Apples, Peaches, Apricots, Plums and all deciduous fruits and nuts.

SAN FERNANDO NURSERY CO.,
San Fernando, Cal.

Write for prices.

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts.

San Francisco

“A Stitch in Time Saves Nine”

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

If you will write to us for the booklet “Feed the Soil that Feeds You” it will be promptly mailed. free. It explains that fertilizing is an investment, not an expense.

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That Oregon Pear Story.

To the Editor: I wish to make a few remarks as to an article published in the PACIFIC RURAL PRESS of January 10 in regard to T. E. Scantlin's wonderful pear story, as he stated one grower received over \$3400 from one acre. Now, I wonder how large one of those acres must be?

I will say Rogue River valley is a good pear country, but there is plenty of hot air, too. I lived in Rogue River valley nine years, and six years near Medford, and was in the fruit business myself, and have some knowledge about pears. My Bartletts were second to none, but I did not get returns such as a person reads about.

I am also sending you clippings from the Medford Mail-Tribune, so you can see what the Medford boosters think of California. It seems to be their hobby to come down to California to boost for Rogue River valley and knock this country. Dr. W. S. Goudy says he has not seen the sun since leaving Medford. Well, I have seen such times in Rogue River valley, too. And he says California is catching retribution for her misdeeds. If there were anything in that, the Medford boosters have something coming to them, too. Mr. Westerlund was connected in a large orchard tract when I lived there, and probably is yet. He evidently wants to turn the suckers to Medford.—M. DEMMER, Gridley.

[Mr. Demmer sends us a choice collection of misrepresentations which we will not kill space with. The proverb says that such things always come home to roost.—EDITOR.]

RAMIE GROWING.

To the Editor: Will you kindly send me information in regard to raising ramie in California and Mexico. Also information in reference to drying it and is there any one here that buys it?—C. A., Los Angeles.

[We know no California publication on ramie growing except the circulars of promoters. There have been publications during the last few years by the Bureau of Plant Industry, U. S. Department of Agriculture, at Washington. It is not at all safe to grow a ramie crop unless someone will contract to buy it from you, for ramie is not of any value for stock feeding or any other purpose but for fiber. There has been a firm operating in the Los Angeles district, encouraging the planting of ramie and offering to buy the product. You may be able to find the name and address of such a company by inquiring at the Chamber of Commerce in Los Angeles.—EDITOR.]

BAGGING WALNUT GRAFTS.

To the Editor: Last spring 20% of

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the walnut scions I put in were killed by frost when the shoots were from two to four inches high. I expect to graft 20 acres this spring and wish to inquire if you can advise a method to protect the tender growth from late frosts. Some advise driving stakes around the stump and tacking burlap over and a few inches above the scion. Could I slip large paper bags over the scion and tie same to the stump below cleft without having to remove the bags on warm days? This latter method might also protect the wax from wind and sun.—T. T. G., Alamo, Cal.

[In our issue of November 1 Edwin Gower commends hooding the stump with burlap, tying it around the stump and punching holes above for the new shoots to grow through. A white paper bag could be used for a time without injuring growth unless the wind should blow the outfit over and break the scions. Such bags would offer considerable resistance to the wind.—EDITOR.]

APRICOTS AND PEARS.

To the Editor: I have an apricot orchard that was here when we bought the place over 14 years ago. Of late, the trees seem to be dying out. We made an investigation of the roots and found them in a decayed condition. A very peculiar thing is that the trees were just white with blooms about four months ago, but at this writing the trees are entirely bare. Our soil is a sandy loam. I believe we possibly have some hardpan underneath. A pear tree in the near vicinity bears nicely every year. Our trees have not had too much water. If anything, not quite enough. Our horticultural commissioner inspected the orchard and states he has never seen anything like it.—A. G., Orange.

[Your trees bloomed out of season because they became too dry last summer and therefore dormant too early. The high autumn temperature did the rest. It was quite a widespread trouble last fall because 1913 was so dry. Perhaps you have some alkali which the pear resists better than the apricot. We should pull out the apricots and live on pears.—EDITOR.]

LEGUMES AND CORNS.

To the Editor: Which is the more suitable, cowpeas or soy bean as a cover crop and partly for hay in a sandy loam soil under irrigation, and when is the best time to sow? Would Kafir corn do well on such soil and is it more profitable than Indian corn? I intend to put out an orchard and would like to raise something in the way of poultry feed and feed for fattening hogs between trees. The land is in San Joaquin county near Escalon. If Kafir corn is suitable, when is the best time to sow.—A SUBSCRIBER, Bay Point.

[You had better try some of each. We expect more from cow peas, if there is adequate moisture in soil and air. Kafir corn will outdo Indian corn in most interior valley situations, and both are good feeds. All the plants mentioned should be sown as soon as frost dangers are over—usually by May 1—but the land should be well prepared long before that time.—EDITOR.]

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AGRICULTURAL REVIEW.

Tree Planting in Coast Counties.

Fruit growers in Santa Cruz and San Benito counties are expecting bumper crops this year, as the ground is well filled with water from the recent rains, and if the weather continues the spring plowing will commence this week. There is a big acreage being planted out in San Benito county, the present estimate being about 35,000 trees, a large portion of which are apricots. Horticultural Commissioner Volch states that more apricots are being planted in Santa Cruz county than anything else, but that there is not a large planting of anything being made. In Santa Clara county, besides heavy plantings of prunes and apricots, there will be a considerable acreage set out to lemons and oranges. Along the west side of the valley, in the foothills, there are already many small groves which have grown well and the district seems to be nearly frostless. If enough water can be secured, citrus growing ought to prove successful.

Counties to Have Farm Advisers.

Yolo and San Diego counties last week each voted the \$2000 expense money necessary to secure co-operation with the U. S. and State University in the appointment of a county farm adviser. Besides the work through these county advisers, the University is organizing agricultural clubs in connection with various high schools through the State. Last week clubs were organized at Dinuba, Reedley and Sanger, with efforts being made at other points. Last week at Washington the House agricultural extension bill passed the Senate, which provides more funds for the county farm adviser movement. The bill provides for demonstrations on the farm of approved methods and scientific discoveries as to farming and home economics made in the State agricultural colleges, experimental stations and in the Federal Department of Agriculture. The Secretary of Agriculture and land-grant agricultural colleges are to outline plans for carrying out the demonstrations. As agreed to in the Senate the bill would appropriate unconditionally \$10,000 annually to each State. In addition a sum of \$600,000 for the coming year, with a yearly increase of \$600,000 for the next seven years, would be provided for distribution among the States on a basis of rural population, conditioned on each State appropriating a sum equal to its portion of the federal funds. After seven years the bill would provide a permanent appropriation of \$4,800,000 annually.

Irrigation Notes.

A convention made up of delegates from the irrigation districts of the State is to be held at Bakersfield, February 23. Among the subjects discussed will be the Newlands river improvement bill, which proposes to take up the work of river improvement throughout the United States on a systematic and continuing plan.

The farmers of the Livermore valley are awake to the necessity of securing more water. A meeting was held at Pleasanton last week, at which a temporary organization was perfected, and a permanent movement was made at the Livermore meeting this week. One of the principal objects of the movement is to conserve

the underground water of the valley against the encroachments of the Spring Valley company.

A meeting of water users on land tributary to Kings river is to be held at Hanford, February 13, to hear the report of the committee of six. It is understood that that committee has arrived at a plan of action and will recommend that the water users proceed to organize.

Change Walnut Marketing System.

In the last issue of the California Fruit Grower the news was given that the California Walnut Growers' Association was to change its system of marketing the crop. Instead of selling through the brokers on the Coast it has been decided to hire its own salesmen in the East, who will sell direct to the trade. Secretary Thorpe is now East, appointing these agents, whose efforts will be to handle the crop to the greater advantage of growers and consumers by this direct method.

Eight District Fairs.

At the annual meeting of the Association of California Agricultural District Fairs held at San Francisco last week, plans were outlined to make the district fairs more successful. The association will ask for the passage of two bills by the next legislature, one to appropriate \$100,000 for these fairs, and the other for a like amount for the promotion of an exhibit of California live stock during the exposition next year.

It was decided that fairs should be held at Santa Rosa from August 31 to September 5 inclusive, at Woodland from September 8 to 10, at Sacramento from September 12 to 19, at Pleasanton from September 23 to 26, at Fresno from September 29 to October 3, at Hanford from October 5 to 10, at Riverside from October 6 to 10, and at Los Angeles from October 12 to 17.

Apple Union Meets.

The annual meeting of the Sebastopol Apple Growers' Union was held last week. Manager Newcomb's report showed that the Union shipped 77,956 boxes of apples of all kinds during the season. The average cost of packing was about 33½ cents per box. The matter of combining with the Sebastopol Berry Growers was left with the directors, subject to ratification by a two-thirds vote.

Strict County Quarantines.

San Joaquin and Stanislaus counties have adopted very stringent ordinances covering the importation of trees and vines into those counties, besides making it an offense to plant diseased vines or potatoes. No rooted vines can be sent into Stanislaus county, though grape cuttings may be sent in under quarantine.

Big Grain Crop in Prospect.

The largest acreage of any for years is seeded to barley and wheat in California this season. With continued favorable conditions the barley crop may reach 700,000 tons, against an average crop of about 450,000 tons. On the west side of the San Joaquin valley, where last year the grain was an utter failure, there are thousands of acres now showing a fine stand of bar-

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The Owl Drug Company began business in 1892, operating its first stores in San Francisco. It now has 20 retail stores in San Francisco, Oakland, Sacramento, Los Angeles, San Diego, Portland, Ore., Spokane and Seattle, Wash. In addition it does the greatest manufacturing drug business of any company west of New York. 8% dividends on its stock are paid on July 1st and January 1st of each year.

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ley. In the Tulare lake bed, farmers are going beyond the levees to plant wheat. From every section of the State we learn of heavy planting. Besides the usual grain farming there will be seeded many hundred of acres to rice in the Sacramento valley, and experimental plots will be grown in the San Joaquin.

With the Citrus Growers.

The committee of seven prominent citrus growers of southern California has been busy of late looking over the different sections that are asking for the location of the new citrus experiment station of the University of California. Last week the committee visited San Fernando, Covina, Pasadena and Riverside.

The orange crop around Anaheim and Whittier is reported to be unusually heavy. Picking is being pushed as rapidly as possible and packing houses are working to the limit.

The Lemona Heights company is planting out 100 acres to lemons and oranges near Riverside above the Gage canal. This company is also figuring on setting out a thousand avocado trees.

The citrus growers of the south will have the pleasure of entertaining the Western Fruit Jobbers Association, which will hold its annual meeting at Los Angeles next spring.

Threshing Hay to Make Straw.

The Independent says that the unusual occurrence of threshing hay in

the month of February is now going on in Stockton, and this is perhaps the first time in the history of the State that such work ever took place at this time. The hay threshing was the result of the unusual condition of the hay market at this time, hay being cheap and a drug, while straw is the scarcest of the farm products and finds a big demand at 80 cents a bale. The work is taking place at the Meal-falfa Company's warehouse, where the Producers' Hay Company of San Francisco is handling 1000 tons of wheat hay.

Grape Growers Form Selling Agency.

Last week at the annual meeting of the San Joaquin County Table Grape Growers' Association, held in Lodi, it was decided to cut loose from the usual way of selling grapes through brokers and to form a direct selling agency which will handle all the grapes of its members direct to the trade of the East. The organization has made a success of packing and shipping grapes and will no doubt be successful in the selling end. At the meeting the association declared a dividend of 20% on the par value of its stock, and besides has left in its treasury money to carry forward its business.

1913 Potato Crop Nearly Gone.

The report comes from Stockton that the potato crop of last year will all be shipped from the islands by the middle of March, under favorable weather conditions. There is only 400,000 to 500,000 bags left in the delta country, and as this is only 8 to 10% of the total crop, it will be shipped within a short time. The recent high water did the most damage to the potatoes on Venice island, where about 10,000 bags became completely water-logged and unfit for use. The water is now being rapidly pumped out of the island, however, and another three weeks will see that tract as dry as before the recent high water.

THE CENTURY-LONG NAVAL HOLIDAY.

To the Editor: Human nature, according to the War Traders, Naval League and Armament Syndicates, is so unchangeably choleric and pugnacious that all talk of permanent peace between peoples on a basis of simple justice is the wildest of all wild theories.

Fortunately the centenary of the Treaty of Ghent, which we this year celebrate, provides us not with "a theory but with a condition," which has remained a world-fact for 100 years.

In 1814 it was agreed by the terms of the above treaty that no warships should be built, equipped, or maintained on the Great Lakes, which form so large a part of the boundary between the United States of America and the dominions of Great Britain in Canada; except that four small patrol vessels, or revenue cutters, armed with one gun apiece, might be kept afloat by each power. Later this amicable understanding was so enlarged that not a fortress was built to protect any part of the 3000-mile division line between Canada and the United States.

That this preparation for peace has successfully kept the peace nullifies the war-trader's motto, "If you want peace prepare for war!" "Where nobody is loaded nothing explodes!"

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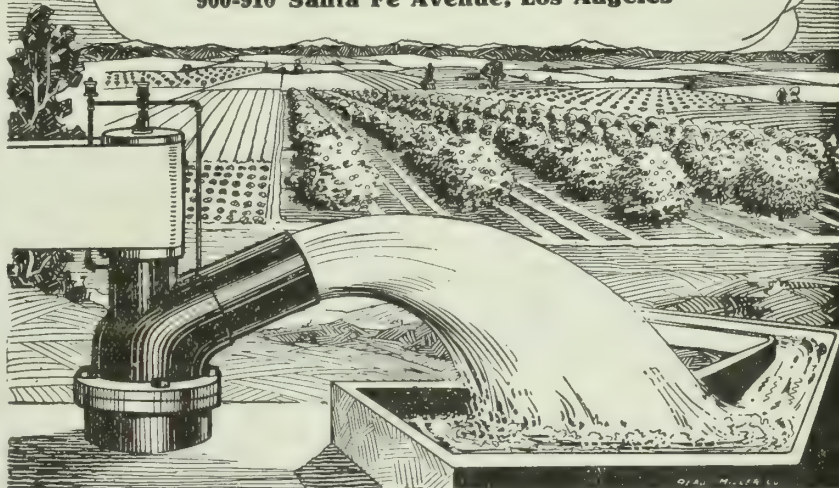
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EDWARD BERWICK

Acting President American School Peace League.
Pacific Grove.

CONDITIONS OF SUCCESS IN VEGETABLE GROWING.

It is time that some Californians jump into vegetable growing, just as Professor A. G. Boquet, who is in charge of vegetable gardening at the Oregon Agricultural College, says they are doing in his State: "The average goods, and the average methods

of selling, are not enough to constitute success. There has got to be something superior.

"I am convinced that many who have signified their intention to embark in the business for the first time next spring, have lands that have not yet demonstrated their ability to grow commercial crops. While in a good many instances the soil may be quite suitable for growing the crops selected, in many others the reverse is likely to prove true.

"The selection of the right crop is another matter that requires very careful consideration. Not only should they be adapted to the soils where they are grown, but also to the demands of the market they are designed to fill. Only when we encourage the growing of the right crop on the right land in the right way, are we doing any good for the vegetable industry of Oregon. Many beginners who do not understand the proper methods of handling their soils, crops, fertilizers, and other problems of production will not be able to make a success of it.

"And it is apparent that there are quite a number planning to begin market gardening without the slightest notion of where they are going to dispose of their goods after growing them. They are simply depending upon somehow, somewhere, and this practice will often prove to be a case of blind-man's buff. Such a procedure will at most bring the grower but a mere pittance, and sometimes will not pay the running expenses of the business."

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California National Forests and Emergency Grazing.

[By JOHN H. HATTON, Assistant District Forester, at the last meeting of the California Wool Growers Association.]

The drought situation in the Santa Clara and San Joaquin valleys began, as a number of you know, not in 1913, but in the spring of 1912. We were already making a canvass of the national forests of California early in 1912 to see whether we could take care of any additional valley stock should an emergency arise, when timely rains came bringing with them temporary relief. No emergency arose, therefore, that season, sufficient to give rise to any special demands on National Forest pasturage.

The general drought continued serious, however, throughout the summer and winter of 1912 and conditions became acute in April and May, 1913. In fact, stockmen couldn't see any feed beyond May 10. There was no roughage from the previous year and pastures were practically bare, with no prospect for any new growth.

The resolution of the Stockmen's Protective Association of March 21, 1913, copies of which were forwarded to representatives in Congress, the Secretary of Agriculture, the Forest Service both in Washington and San Francisco, and the memorial to the California State Legislature from the California Live Stock Breeders Association grew, therefore, out of a definite and vital need, the urgency of which we all realized to the full extent.

Naturally stockmen looked to the mountains or the National Forests for relief. It is not an exaggeration to say that comparatively few people outside of those directly or indirectly concerned with the actual use of National Forests have a clear conception of the extent of our actual, unused grazing resources. A great many people have had the erroneous impression that unlimited forage annually goes to waste. One of the results of the conditions the past summer has been to clear up this misconception in the minds of many. I want to state that accessible forage in great abundance on the National Forests has not been and is not being looked up or withheld from use. As a matter of fact the National Forests are for the most part fully stocked where the ranges are convenient and sufficiently accessible to furnish a demand for them. Where we have surplus feed in appreciable quantities, it is well back in the mountains and difficult of access.

HANDLING OF THE GRAZING EMERGENCY.—I would like here to review briefly what actually took place when the requests for assistance came to the attention of the Forest Service last spring, to show you that every effort was put forth to offer such relief as we could promptly and as unhampered by red tape as possible. The service was criticised in some quarters for not throwing the forests "wide open", but I think you will readily see that such a course was impossible, and might have done a great many people injury, while actually benefiting few or none.

The Livermore Stockmen's Protective Association passed its resolution on March 21. About the same date a resolution was introduced in

the State Legislature asking the California delegation in Washington to use their best efforts in securing the desired privileges. The appeal was made to the National Parks, as well as the National Forests.

Immediately on receipt of the resolutions the Forest Supervisors were asked to report the number of additional stock they could carry on their respective forests. They were urged to make an estimate that would secure full utilization of every possible piece of range. A representative of the San Francisco office spent several days in the country affected by the drought and found that conditions were fully as bad or worse than reported. On April 8 complete stock of our available surplus resources was reported to the Forester with a recommendation that the high Sierras be opened to sheep to help out. We found outside of the high Sierras and some back range in the Klamath country, we could not take care of more than 8500 additional cattle on the ranges already occupied, and but a small number of sheep without serious effect on regular permittees, or without overstocking already used ranges. Including the high Sierras we found we could offer relief for a maximum total of only 8850 cattle and horses, and 64,500 sheep and goats. This included range in the Klamath of doubtful use, which had once been tried by sheepmen and abandoned.

DEMAND AND SUPPLY.—April 21, about three weeks after the resolutions praying for relief were received, the additional estimates were ready and special authority from Washington received. Steps were then taken to secure applications. Advertisements were sent to four papers in the San Joaquin valley and all prospective applicants notified that a representative of the service would be at Livermore, April 26; at Stockton, April 27; Fresno, April 28; Hanford, April 29; and Bakersfield, April 30. The Supervisors of the Stanislaus, Sierra, Sequoia, Kern and Inyo Forests were asked to be at these meetings or send a representative, in order that a complete understanding might be had and all the details as to drives, etc., worked out. At each of these meetings there were about fifteen sheepmen.

The results of these meetings were that we received applications from approximately 100 sheepmen for 230,740 sheep and 64,200 lambs; and from 32 cattle and horse owners for about 5000 head. Besides these there were about 80 applicants who applied direct to the Supervisors for cattle and horse permits, making a total of 112 for this class of stock.

As stated, the total sheep applications not considering the 64,200 lambs, covered 230,740 head. (We don't count lambs under six months old which are running with their mothers, our estimates being based on old sheep only).

We could provide for a maximum total of 8850 cattle and horses, and 64,500 old sheep with their lambs, provided the Klamath ranges which were doubtful, could be used. We were assured that range only for 41,000 sheep would be taken. In other words we had about enough cattle and horse range to meet the demands for this class of stock, provided it were

practical for stockmen to use it, but we were assured of being able to provide range for less than one-fifth of the number of sheep applied for in addition to our regular occupants of the ranges.

APPEALS TO MORE DISTANT FORESTS.—Accordingly it became necessary to establish a set of preferences and to look for range elsewhere. The District Foresters at Denver, Albuquerque and Ogden were wired and replies were received that they could take care of 16,000 additional cattle and horses, and 68,200 sheep, but only in one or two instances, as I remember,

were stockmen willing to ship, or did ship these long distances.

In establishing rules of preference about the same principles were applied as are on the National Forests. First consideration was, therefore, given to:

1. Small resident owners of stock range and ranches.
2. Large resident owners of stock range and ranches.
3. Large resident owners of stock who do not own sufficient range or ranch property to support their stock, but depend upon leasing.
4. Non-resident owners.

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Belgian Stallions

Have for sale Bay 4-year-old, weighs 1950 in ordinary condition; took first premium at 1913 State Fair; his dam imported mare Rosebud, weighs 2318 lb.; took first premium and gold medal sweepstakes at 1913 State Fair; sired by imported stallion Derby. Have at my place 30 colts by this stallion. A proven sure getter of fine foals. Also a sorrel 3-year-old, weighs 2000; will weigh 2300 when mature. His dam imported mare Lizzie de More; took second premium at 1913 State Fair as an individual; first premium as mare and colt, and first for mare and two colts under 4 years; sired by Derby. Prices reasonable and will make terms that will allow purchaser to earn good part of purchase price with the stallions. Call at my place and see these fine young stallions and their get.

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Our recent importation arrived at our Oakland Stables December 13th. At the International Live Stock Exposition, Chicago, December, 1913, our stallions won two Gold Medals; two Championship Ribbons; two Second Prize Ribbons. There were over 600 Percherons at this great show.

If you want the best, let us hear from you.

McLAUGHLIN PERCHERON COMPANY

Kansas City, Mo. Oakland, Cal.

Salvador Stock Farm Shire Horses



Don't Sign That Note for \$3000

I will sell you a better horse for half the money.

HENRY WHEATLEY,
NAPA, CAL.

It was found of the 100 sheep applicants there were 36 only, who owned and resided upon improved ranch property. These 36 owned 124,360 head of grown sheep, 47,100 lambs and 1065 cattle and horses. I'll not discuss the cattle and horse applications since few who applied at these special meetings wished to use the ranges on account of the long distances to drive or ship and other inconveniences. We actually accommodated under emergency permits, however, 83 owners of cattle, with a total of 7103 head, or about all the cattle applicants who cared to take out permits.

With only a resource which we could actually be sure of using, which would take care of 41,000 sheep, it was necessary to disapprove at the start the applications of transient owners, and confine the privileges to resident ranch owners. It was also necessary to limit the privileges to any one applicant to 1250 sheep, plus the natural increase of lambs. This might give a maximum, including lambs, of 2500 head or less, depending upon the lamb crop. If owners did not have the regular quota of lambs they were allowed to take in additional old sheep at the ratio of one old sheep to three lambs, to make up the number. Thirty-two sheep applicants were approved, aggregating 42,215 old sheep, or 2215 more than our estimates called for. No success was had in interesting owners in the Klamath country, and only one or two parties shipped to Colorado.

DIFFICULTIES.—There were petitions praying for the admission of stock, and there were counter petitions praying that they be kept out. In the few cases of conflict first consideration was given to the needs of those who were suffering for range. On the other hand, a situation infinitely worse than the one already before the service would have arisen if the demands of some that the forests be indiscriminately thrown wide open had been conceded. As stated in the beginning of this discussion, most of our accessible ranges were already fully stocked. By fully stocked is meant carrying the numbers which they should under normal range conditions. This was particularly true of the sheep ranges, and to have admitted all the sheep affected by the drought would have meant that they would have been indiscriminately spread over the cattle ranges, with the result that no one would have had a marketable product. Besides the ranges would have been reduced to their former over-grazed condition. The fact that some effort has been made to improve the ranges under National Forest administration made it possible to accommodate over 7000 additional cattle and horses on occupied cattle and horse ranges when this emergency arose. That same fact is enabling the Service to gradually increase the numbers under regular permits from year to year, on most of the National Forests of the state.

It is realized, too, that the stockmen themselves had many difficulties to confront. This led to indecision and resulted often in delays. A number of approved applicants changed their minds several times and the problems of yesterday which we thought solved were daily renewed. A number backed out at the last minute or made no response to letters and wires for definite decisions, thus making it necessary in a few cases to reconsider other applicants first disapproved. One stock journal took this point up and severely criticised the Service for not adopting

a more liberal policy in the beginning. It was felt that the criticism was unfair, since the estimates were consumed anyway, although considerable confusion arose out of the indecision of applicants.

The difficulties in reaching the ranges were also considerable on account of long drives and rough country. As one party said when told where his allotted range was, "Well—maybe so I get there in time to come back."

In addition to long drives, feed along the route was scarce, and surmounting all these adverse conditions, extremely and unusually bad weather was encountered. Much of the stock and many of the men with them were unused to mountain conditions, and all this contributed to the unfavorable features.

As to regulations and requirements, it should be said that excepting two or three applicants who violated or refused to follow the regulations or their instructions, the Service was well pleased with the men who drove in and their efforts to abide by certain necessary instructions. We did not wish to bring trespass proceedings against two or three parties who gave trouble, in view of all the circumstances, but in handling a similar situation in the future, it would be only fair to those who did try to do what was right, to refuse to grant future concessions to those who did not.

As for sheepmen themselves who took out permits, we have had various expressions—some very favorable and others not so favorable, in regard to the ranges used and the benefits received. In most cases the sheep entered the mountains in poor condition; all left, however, in fair to good flesh. If the concessions did not in every case bring maximum benefits, it should be said that a very unusual, serious, difficult and much involved situation came up for immediate solution, which it is believed was handled with reasonable promptness and effectiveness. The experience of one season has suggested several things which would greatly help in handling a similar situation. Already certain driveways have been revised and feed areas laid out along the routes. Arrangements could also be made to get the sheep back on the ranges from two weeks to a month earlier, depending on the character of the season. There is no complaint to be made as to any detrimental effects upon the ranges used.

ATTITUDE OF THE FOREST SERVICE.—Summed up, the Service accommodated 7103 cattle and horses and 42,215 sheep, in addition to those already using the forests. The emergency resources were estimated, authorizations received, stockmen notified, and applications filed in three weeks after the petitions were received. It was impossible to accommodate all who first applied and thus offer complete relief; but it is felt that everything within reason, and in justice to others already dependent upon the forests, was done to help out other stockmen who ordinarily find sufficient feed and pasturage at home. Moreover, the Service offered what assistance it could most gladly and cheerfully, and stands ready to help again in the same spirit should a similar need or emergency confront the stockmen of the state.

FOR WEARY OAK LAND.

To the Editor: What fertilizer or method of culture should I use on some land at Menlo Park that has

been cropped until it is no longer productive. The soil is naturally rich and grows good oaks.—C. S., Menlo Park.

[Put on all the stable manure you can get possession of and plow it under deeper than the land has been recently worked. It is a very good year to get the full benefit from such

treatment. If you cannot get stable manure buy a "complete fertilizer" and use it with barley and plow under all the green stuff you get by March or April and summer fallow—disking it from time to time to keep the surface clean and loose. Your 1915 crop will do to go to the Exposition.—EDITOR.]

Bulls For Sale

60 HEAD SHORTHORN BULLS

Highly Bred, Well Developed
Individuals in Good Condition

This bunch contains 3 registered bulls in every way fit for
herd-headers.

PRICES RIGHT

For further particulars enquire

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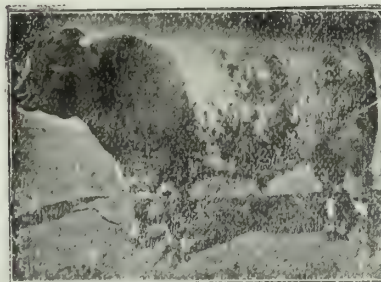
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WOODLAND, YOLO CO., CAL.

T. B. GIBSON, Owner.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.



KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

BREEDER OF

SHORT-HORN CATTLE SHROPSHIRE and MERINO SHEEP

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

A. W. MORRIS & SONS CORP.

Holstein-Friesian Cattle

Woodland, Cal.

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes
For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

Dairy Steers are Unprofitable.

The PACIFIC RURAL PRESS has never believed in the proposition of using the dairy cow as an important supply of beef, at least to the extent of making steers from bull calves, although since the fuss about high beef prices started some people have tried to talk it. How the plan works out practically under the present system of selling is seen in a statement of Leroy Anderson of the University of California, as quoted in Hoard's Dairyman in a little discussion on the matter.

He stated: "During the past few weeks I saw a bunch of two-year-old

steers of dairy extraction sold for 5c. a pound, and they were driven for 15 miles before being weighed, thereby shrinking at least 50 pounds each. And these were purchased by a wholesale butcher who had his own slaughter house and sold direct to consumers or retailers. Thus he was no middleman. A little later I saw a bunch of range steers of beef breeds, mostly three-year-olds, sold for 6.85c. a pound and weighed on the range without any shrinkage whatever. They were much larger but would average no fatter than the dairy bred steers. So long as this thing is practiced the dairyman is not going to bother much with raising steer calves. There are other features about producing beef on the farm at a loss, but this is enough for the present."

Experimental data is at hand showing that there is no such difference between the value of beef steers and dairy steers. It will not help matters with the dairyman or the meat-eating public to demand that the dairymen save their calves only to be sold later at prices all out of proportion to their value. The meat packers had better think on these things.

GROWING AND FEEDING SQUASHES AND MILO.

To the Editor: Would you kindly give me the feeding value of sweet potato squash for hogs? I am not sure of the name so will explain they are of a slate color and grow about 18 to 24 inches long and about the shape of a sweet potato. Kindly give me the feeding value of pumpkins. I would also like to know the proper time to plant milo maize and also the squash on the same ground.—W. S. Los Molinos.

[There is not any notable difference in the feeding value of field squashes and pumpkins. They have all been selected toward the same standards of quality and whatever has a good name has reached similar standing. They have a good record as hog feed though the pork has been reported off color when too much squash is fed. For the same green weight the squash family would be worth a little less than half as much as alfalfa for growth and a little more than half for fattening. Sow both squashes and milo whenever the ground is in good order after the dangers of frost are over—for both are tender.—EDITOR.]

GOVERNMENT SALE OF PRODUCTS.

A popular Government institution for the scientific marketing of farm products, to be known as the agricultural capital, to be separate from any existing branch of the Government, was proposed in a bill introduced in Congress last week by Senator Borah of Idaho.

Designed primarily to eliminate middlemen and reduce the cost of living, to arrange transportation facilities and otherwise improve conditions of the farmers and consumers, the bill aroused considerable interest among Senators by its radical suggestions, and was referred to the Agricultural Committee.

The institution would be controlled by fifteen directors. It would be made up of county organizations requiring at least fifty farmers in each county to form a branch association.

NO PIT is required with the Krogh Deep Well Turbine Pumps

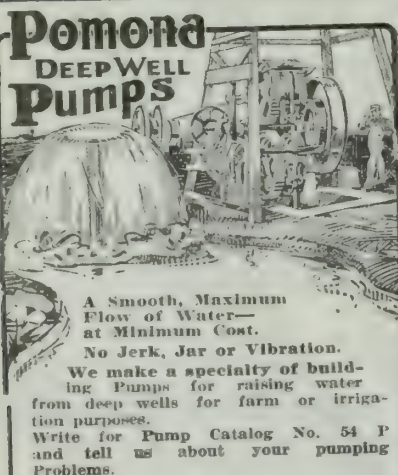
For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belt or direct motor driven types. If interested, write for Bulletin.

Krogh Manufacturing Company

SAN FRANCISCO, CAL.

Branch at
LOS ANGELES, CAL.

Pomona DEEPWELL Pumps

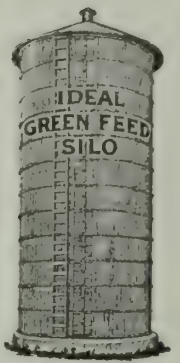


A Smooth, Maximum Flow of Water—at Minimum Cost. No Jerk, Jar or Vibration. We make a specialty of building Pumps for raising water from deep wells for farm or irrigation purposes. Write for Pump Catalog No. 54 P and tell us about your pumping Problems.

POMONA
Manufacturing Co.
Pomona, Calif.

We also make a full line of Gates and Valves for cement pipe irrigation.

What Does a Silo Cost?



Experienced dairy farmers claim that a good silo will pay for itself the first year. That being the case it costs nothing.

As a matter of fact, if you are keeping dairy cows or raising stock for the market, there is no investment which you could make that will pay you better returns than an

Ideal Green Feed Silo

The cost is a secondary consideration and it is not a question of whether you can afford to erect a silo this year, but rather whether you can afford to be without one another season.

Order an Ideal Green Feed Silo now and get it erected in time to save your first cutting of alfalfa.

Write for Catalog B for full information.

ENSILAGE CUTTERS AND ALPHA GASOLINE ENGINES

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St.

SAN FRANCISCO

1016 Western Ave.

SEATTLE

PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.

● Fill Your Silo Quickly With Less Power and Labor ● You can operate this machine with a 40 h. p. gasoline engine. It's the lightest running, slowest type of ensilage cutter made—130 lbs. 20 ft. long. It cuts the crop in a steady full stream rapidly up into the highest silo without waste of power. The ensilage packs perfectly and keeps sweet and succulent. The

PAPEC ENSILAGE CUTTER

is easy to set up and to take down. Simple in construction, easy to get out of order. The entire frame is one solid piece of semi-steel. The bearings are always in line, run smoothly and will not heat. The feeding mechanism is geared to the main shaft—always gives you the desired length of cut. The Papec Ensilage Cutter is not chain driven, but has heavy gears which transmit all the power. It cuts ensilage perfectly and swiftly—as fast as you can bring the crop to the machine. Write for Illustrated Catalog. Send today for this book. It shows how The "Wonderful Papec" cuts ensilage with less power, time and labor. 25 convenient distributing points in the U. S.



PAPEC MACHINE COMPANY
Box 17 Shortsville, New York

Sold by Delta Construction Co., Sacramento, California.

UNPARALLELED OPPORTUNITY

To Secure

REGISTERED JERSEYS

At the

CALIFORNIA BREEDERS CONSIGNMENT SALE

On G. O. Hillier Jersey Farm Modesto, Cal., April 2, 1914

90 Head—All purebred—Over 70 FEMALES—Many REGISTER OF MERIT COWS With remarkable records—3 Phenomenal Bulls—All stock sold under a WRITTEN GUARANTEE of soundness, etc.—BE THERE.

For Catalog and Particulars Apply

G. O. HILLIER, Sales Manager, Modesto, Cal.

B. A. RHODES Auctioneer, Los Angeles, Cal.

Assisted by J. H. CORLEY, Modesto, Cal.

ARE YOU SHORT OF WATER? CONSULT ME!

I am able to locate underground streams and I am willing to contract with you for boring well under the obligation of "no water no pay." If the well I order to bore has not the capacity agreed upon you have to pay nothing.

J. von GAL S., Box 489, Lindsay, Cal.

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LARGE HANDY CANS
SMALL GREASE CANS
WHITTIER COBURN CO. S.F. SOLE MFRS.

BLACK LEG
LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low priced, fresh, reliable, preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.50 Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (no other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly. THE CUTLER LABORATORY, Berkeley, California.

Nine Out of Ten "Sick" Hogs Have Hog Cholera.

The Department of Agriculture at Washington is in receipt of frequent inquiries concerning methods for distinguishing hog cholera from other swine diseases. The specialists in hog cholera investigations answer these inquiries as follows:

Although at first thought this matter of diagnosis appears to be of prime importance, in reality it is not so important or so difficult as it seems. It is estimated that at least 90 per cent of all deaths of hogs from disease in the United States are caused by hog cholera. Therefore, in the case of any fatal outbreak, the chances are about nine to one that the cause is hog cholera. It is true that other infections may and do frequently complicate outbreaks of hog cholera, but in such cases the germ of hog cholera is the primary cause of the disease; and if we can take care of the germ of hog cholera the pig will usually overcome the other infections himself.

The symptoms exhibited by hogs sick of hog cholera are not sufficiently distinct from those produced by other maladies so that a positive diagnosis can be made only through a careful consideration of a number of other factors in connection with the symptoms. From a practical standpoint the important thing is to recognize hog cholera as soon as possible after its appearance in a herd in order that anti hog-cholera serum may be, applied before the disease progresses too far. Good serum may be depended upon to protect well hogs, and even to cure a large percentage of those in the earliest stages of the disease, but it will not be of much

avail when used upon hogs that are already visibly sick.

The following suggestions to farmers are offered as an aid to the early recognition of hog cholera in a herd:

1. Keep posted concerning the condition and health of hogs on other farms in your neighborhood. Sick hogs on a neighboring farm are a positive menace, for the germs of hog cholera are easily carried on the feet of men or animals.
2. Look over your herd regularly in order that any sick hogs may be promptly discovered.
3. If any hogs in the herd are found to be "off feed" or appear in anywise sick, separate them immediately from the remainder of the herd and keep them and the main herd under close observation daily. If there is a tendency for the disease to spread in the herd the trouble is probably hog cholera. This diagnosis may be confirmed by killing one of the sick animals and examining the organs in the manner described in Farmers' Bulletin 379.
4. When the first symptoms of sickness are observed, an immediate change of feed sometimes corrects the trouble. This is particularly true of swill-fed hogs.
5. If there is any tendency for the disease to spread in the herd, do not temporize, but immediately treat the herd with serum from the University College of Agriculture at Berkeley. Prompt administration of the serum is essential to success.
7. Remember that hog cholera kills millions of hogs where other diseases kill thousands.

THE CHEAPEST WAY TO KILL GOPHERS AND SQUIRRELS



used with the U. S. SQUIRREL DESTRUCTOR, will kill every squirrel and gopher on your farm and thus end crop destruction.

Costs Less than **ONE** Cent in money Minute in time For Each Burrow Treated

What Does Your Method Cost?

No Experiment KILMOL is thoroughly practical. These concerns, all large land owners, are using KILMOL in great quantities: Natomas Consolidated; Santa Fe Ry.; Southern Pacific Ry.; Miller & Lux; Spring Valley Water Co.; Barton Vineyard Co.; Calif. Hawaiian Sugar Refining Co.; Calif. Wine Growers Association; Crocker-Huffman Land & Water Co.; Italian-Swiss Colony; Leland Stanford University; Simon Newman Co.; People's Water Co.; and many others too numerous to mention.



Government Inspectors are using KILMOL in the SQUIRREL DESTRUCTOR in a great many sections of California, which is the best recommendation possible.

EveryDay in the year, wet or dry, KILMOL can be used. Weather makes no difference.

100% Efficient The animal cannot escape. Failure is impossible.

Free It costs you nothing to learn all about this wonderful method—the best ever discovered for killing squirrels and gophers. Let me prove these statements. Send today for particulars.

Trial Offer If you wish to investigate the possibilities of this method immediately, send \$17.50 and I will send you the complete outfit; SQUIRREL DESTRUCTOR, 3 1/2 feet of one-inch hose, carrying straps, and a five-gallon can of KILMOL. With an average infestation, this will treat over sixty acres and the cost thereafter for KILMOL will be \$6.00 for each additional sixty acres.

After you get this outfit, after you have given it a trial, if you are not satisfied, I will gladly refund your money.

Send personal check or money order.

HERBERT F. DUGAN, Dept. C

1170 Sutter St., San Francisco

5 gal. Kilmol today is worth \$100 in crops tomorrow

Strychnine, 65 an ounce. Barley poisoned according to Gov't formula, \$7.50 for 100-lb. drum.



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STRENGTH DURABILITY

WESTERN

SURFACE IRRIGATION PIPE



Indispensable for Alfalfa, Beet Lands and Orchards

Not a drop of water will ever be wasted—and every quart will always be placed where you need it most—if you use **WESTERN Galvanized Surface Irrigation Pipe** on your gardens, fields and orchards.

Not only does it prevent waste and supply water on high points as well as in depressions (just where you need it) **WESTERN Surface Irrigation Pipe** is **PORTABLE** and it is **PERMANENT**.

Unlike lock-seamed pipe, **WESTERN IRRIGATION** pipe will not leak and can be hauled about the ranch wherever it is needed, without damage. The secret of its strength and durability lies in its **RIVETS**. The experience of thousands of prosperous farmers has proven that the **riveted** seams of "Western" Surface Irrigation Pipe, make it the **best, strongest, and most economical** irrigation pipe on the market.

Sold in solid lengths, 10 ft. 6 in. No sections

You owe it to yourself and your farm to investigate this remarkable pipe. When you do you will realize you cannot afford to get along without it. Write for a full description and our surprisingly low prices.

Western Pipe & Steel Company

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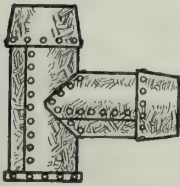
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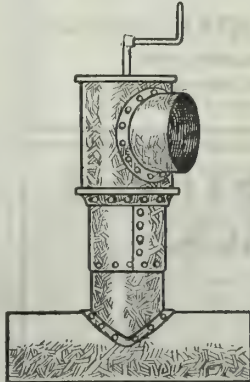
"Western" Galvanized Surface Irrigation Wyes



"Western" Galvanized Surface Irrigation Elbows



"Western" Galvanized Swivel Irrigation Hydrants



With the Live Stock Men.

A note from T. J. Gilkerson of Lemoore states that the silo he built last fall and filled with milo maize has proven very satisfactory. He does not know how it would compare with Indian corn, but is very much pleased with the feed.

Live stock breeders of England have organized in an effort to urge Parliament to consider their request for financial help in exhibiting at the Panama-Pacific Exposition next year.

Shipments of milk and butter from Turlock for the year 1913 were valued at \$520,982, according to the Tribune of that place.

Beverluis & Staathof commenced operations the first of the month at their new modern dairy ranch near Corcoran. They are now milking 85 cows, which number will be increased to 100 shortly.

The Imperial valley is now shipping butter to the extent of ten tons daily, valued at \$2,000,000 per annum.

The last meat market in Sonora, Tuolumne county, has quit business. The owner has taken up the more profitable end of the business, that of raising stock.

J. W. Benoit of Modesto has recently commenced to officially test his herd. Several very good records have been made, among them is Avondare Cloverdale 3d, who in seven days produced 23,905 lbs. butter, 595.1 lbs. milk. She is now on yearly test and for the month of December produced 2556.8 lbs. milk and 87.57 lbs. butter fat, 109.46 lbs. butter. She

is one of the heaviest and most persistent producers in the herd. Avondare Cloverdale, her dam, has an A. R. O. record in seven days of 22.5 lbs. butter and was Stanislaus county's champion in 1912.

The U. S. stock reports show that Nevada gained in the number of its horses last year, from 75,000 in 1913 to 76,000 head in 1914. Mules just held their own, while dairy cows gained from 20,000 to 22,000. Beef cattle gained 4000 head, and sheep 30,000. Hogs also increased in number, from 32,000 to 33,000.

R. J. Dartt of Fort Bragg, will build two 100-ton silos this year.

Frank X. Walker has purchased more range land near Placerville for his 500 head of cattle. Mr. Walker also expects to raise horses and has already 30 head to start with.

Hog cholera in 1913 cost Iowa farmers more than \$33,000,000, according to statistics on the epidemic recently gathered by the agricultural extension department of Iowa state college. Reports secured from 1120 different men, covering every community in every county of the state, indicate that cholera killed 2,827,907 swine, or 34.3% of all the hogs in Iowa.

At the Portland Union Stock Yards last week trade in hogs and sheep was particularly good and higher prices secured. Steers brought from \$7.50 to \$7.80; cows, \$5.25 to \$6.60; hogs, \$8.30 to \$8.50; and sheep sold for \$4.65 up to \$6.75.

W. M. Carruthers leaves San Francisco this week for a three weeks trip East. He expects to buy several carloads, mostly of Herefords for California breeders.

A letter from the Liverpool Sale & Pedigree Co. of Liverpool, N. Y., states that their last sale, held January 27 and 28, was very successful. Bidders came from everywhere, one of the largest buyers being a Washington man. The average price paid for animals was \$270, the total number sold was 178 head and they totaled \$48,180. The next sale will be held March 10 and 11.

Henry Peters of Dixon, has purchased the 5200 head of sheep as well as the range of C. R. Nissen estate in Yolo county.

Two car loads of fat, 9-months-old lambs were sent recently from Lemhi, Nevada to Omaha, where they sold for \$7.75 per hundred weight. After paying freight the net returns were \$6.04 per head.

Livermore horsemen will give their annual horse show at that place on February 28. Already enough stock has been pledged to exhibit to insure the success of the undertaking.

RATION FOR DRAFT STALLION.

From New South Wales the following advice is given regarding the feeding of a draft stallion during the breeding season. The inquirer wanted to know how much green feed should be given and what was the best hay to feed, wheat, oat or alfalfa.

In reply it was stated that the best

feed for the purpose would be: oat hay 18 pounds, oats 12 pounds, maize 4 pounds, beans 3 pounds, salt 1 ounce.

This should be divided into four feeds, the largest to be given at night, after the day's traveling is done.

Barley, oats, and alfalfa, as greenstuff, are all good, but alfalfa has the greatest feeding value. If any considerable quantity of greenstuff be given, the ration should be reduced, more especially in the case of alfalfa, owing to its high protein content. Roughly, 1 pound of the dry feed mixture should be deducted for every 2 pounds of green feed given, but the latter should not be allowed to replace more than one-third of the ration.

Of the three hays mentioned, oat hay is the best, and wheat is the worst.

Live Stock Directory

SWINE.

BRAE BOURNE RANCH, property of Mr. and Mrs. E. C. Rand—Fine young Berkshire boars for sale, March farrow. Route 3, Box 69, Santa Rosa, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND CHINAS—Still have a few extra nice gilts for sale at \$15 each, and one bred sow. N. M. Lester, R. 1, Gridley, Cal.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

MULEFOOT HOGS—Best for Pacific Coast. Jno. Dunlap, Williamsport, Ohio.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

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The Calf Lot in Winter.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

"Next to proper breeding, the care of my calves is of greatest importance, as it is to them that I must look forward for my future production," remarked a successful dairyman recently, and from the appearance of his young stock it was evident that he practiced what he preached.

Giving the calf good care in the winter months is usually about the most trying task the average dairyman encounters, as in a great many cases the calf feeding stanchions have been built in the open, near the milk-house, which answers the purpose fairly well during the summer months, but is very uncomfortable for both the calf and the feeder in rainy weather.

In order to overcome such difficulties and at the same time cut down labor expense, many have built regular calfsheds and corrals, and have found that the money was well spent.

The writer recently saw such a system being used on the dairy owned by Collins Brothers, near San Leandro, Alameda county, and which, we might add, is one of the best-equipped dairies in Alameda county. The calfshed on this place faces the north, as there are fewer rains from that direction, and as a result the stock is better sheltered than it would be otherwise. About half of the floor space is made of cement, with a small manger or gutter running the entire length next to the stanchions, which run lengthwise near the center of the build-

ing. This gutter is connected with the drainage system of the dairy barn and milk-house, and water is conveniently located so that it may be flushed out. A home-made device for holding the buckets which are used to feed the skim-milk, was made from a piece of two-by-twelve redwood. Holes were sawed in this board the same distance apart as the stanchions, so that the bucket may be held in place securely. One edge of the board was hinged to the row of stanchions, and folding legs were hinged onto the other edge, which support what might be called a platform when let down. This is directly over the gutter, so that any waste falls into that, to be later flushed out. By having the board hinged, it can be lifted and hooked up out of the road when not in use.

The corrals run out from this building, the outer half affording a generous amount of protection in bad weather. Crushed rock was hauled into the corrals and in that way they are kept free from mud.

Alfalfa feeding racks are placed under the roof on the division fences, so that it can be fed without going out of doors.

Water is provided in cement troughs at the end of each corral, and has a self-regulating float.

A continuation of the building and corrals is used for the bulls, which also need protection in the winter.

The cost of such equipment is small when compared to the benefits derived, and is amply repaid by the better condition of the growing stock.

VETERINARY NOTES.

To the Editor: I have a six-year-old mare that had a spavin on each hind leg. I have succeeded in removing the spavins, but she is lame yet. I have tried everything without any success. Could you please tell me of any remedy that I could apply to take out the lameness?—S. J. MASCOVICH.

Answer by Dr. E. J. Creely: The only way a bone spavin can be cured is by causing the small bones of the hock to grow together. This can only be done by a graduated and licensed veterinarian, who would use the actual cautery. I know of no medicine which would begin to compare with the cautery, and even this treatment fails if the spavin is of too long standing.

SUGAR BEETS FOR HOGS.

To the Editor: Would you advise planting sugar beets for fattening hogs; whether heavy or sandy soil is to be preferred; their value compared with Egyptian corn, and comparative yield? I have pure water, good alfalfa, and intend raising melons and pumpkins to feed while hogs are growing and wish to know the best and most productive crop to fatten them on.—W. B., Exeter.

[We should not consider sugar beets as a fattening food for hogs, and in no way a substitute for grain. They are a good succulent feed for growing but you have already so much in that line listed, that you do not need the beets. If you need fattening grain, grow barley or Egyptian corn or Indian corn—whichever your conditions best favor.—EDITOR.]

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Turkey Notes are Now Seasonable.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

February is too early for the Eastern turkey raiser to be looking for eggs, but here in California I have seen an old turkey hen setting at Christmas, and that was not in southern California either. But they don't all lay at quite such unseasonable times and very few are laying now. At least there are quite a few complaints that the turks are not doing business, which is rather strange with such an open winter. A great many that are out on range are left to forage too much instead of being provided with a little extra feed at this time just to get them started. While the range is a good thing it must not be depended on to furnish all the feed. Where acorns are plentiful very little feed will be needed, but if the hogs have cleaned up the acorns on the range the turkeys must be fed at least once a day, twice is better.

As the range grows smaller in area, owing to more and more little homes, the turkey is being replaced by the large breeds of poultry such as the Orpington, and owing to the higher price of turkey there is but a limited call for the real old-fashioned large sized turk that took a day to cook. The average call is for small turks weighing from six to ten pounds and for this kind of trade the White Holland seems to fill the bill. This variety seems to be better contented than the others in close quarters. They bear confinement pretty good and will lay and raise their brood even in a yard.

The Bourbon Red is having a kind of a boom now and all kinds of good things are being claimed for it, but whatever variety is kept they can all be made profitable with right care and handling.

MATING AND HANDLING.—When turkeys are properly mated the breeder has achieved a large measure of success; and if improperly mated the flock will deteriorate very rapidly. The hens should be selected of good size, all the small ones being sold for table purposes, because the female rules the size. Hens that are matured, that is to say not under one year old and older is preferable and those that have made full growth and are heavy boned for the breed are the ones to choose. For a small flock a yearling Tom will do, if he is strong and vigorous, but for a larger flock a two-year old bird should be preferred. To have the young flock of a good color and good to look upon you should remember that the male bird influences the color and finish, so it pays to get a good sire to your hens. Never cross varieties or breeds, keep to the one type you have, or sell it and get another. It is not necessary to keep full bloods but keep the type free from other mixtures by crossing, there is nothing gained by it and they are an eyesore to anyone who has the least sense of harmony.

Choose the shortest legged hens and those having similar markings if possible, and you will get more pleasure while caring for them. Short legs generally go with a medium full breast and they are the best to breed from, their young will not require more than half the feed to fatten in fall, that the long, lean, rangy legged turks will. The average turkey hen lays from 18 to 30 eggs before getting

broody, and if they have been wintered well they will usually begin to lay while the nights are cold enough to chill the eggs. So it is safer to gather the eggs and leave a china nest egg or two in the nests. By taking the eggs away the hens can be induced to lay more eggs than if the nest is allowed to get filled with eggs before removing any.

Give the breeding flock as much range as you possibly can for by so doing the eggs will be more fertile and hatchable and the young poults will be stronger. Make the nests in as quiet and retired a place as possible for the turkey hen is very timid and nervous at laying time.

FEED FOR LAYERS.—I have just answered one of our subscribers by letter who wanted to know what to feed. The food should be rich in protein such as wheat, oats, ground bone and plenty of green feed. If given range they will generally supply themselves with material for shell and as a means to health green onion tops are greatly relished. Mashies are fed by some turkey breeders but I don't think they are good for them. Good sound grain and sprouted oats or barely is also good.

Turkey eggs are often brooded by hens of the large breeds of poultry such as Barred Rocks and Orpingtons, and these make excellent mothers for young poults if they are kept clean and given their liberty with the poults. Hens such as these do not ramble like the turkey hen so the little ones, while practically free are yet somewhat confined to territory and never are quite so bad to ramble as when raised by the natural mothers.

DURATION OF INCUBATION.—It takes from 28 to 29 days to hatch turkey eggs and if the turkey hen sets them she must be disturbed as little as possible. Place a supply of good whole corn and fresh water near the nest and leave her to herself until near hatching time, when it pays to run the risk of disturbing her to give both nest and hen a good dusting with some good insect powder.

Thousands of young turkey poults are lost every year through the large lice which infect turkeys, getting on the little ones at hatching time. Turkey poults are called tender, but if they were cast iron those great ugly lice would kill them, so it pays to go to some trouble to keep them off. Never disturb the hen at hatching time, the dusting must be done before, to be effective.

When the poults are all hatched and the hen seems willing to leave the nest place her in a pen made by nailing three boards together, making a three-cornered inclosure about a foot or 18 inches high. Put a board over one corner for the hen to hover under. This gives the hen liberty to pick around and makes her feel free. But she will not leave the nest for long, nor will she go out of sight of her brood. Of course if troubled with rats, skunks or other vermin close cooping will have to be resorted to. As young turks feed on insects very largely, in a natural state, this should be kept in mind when feeding. Plenty of protein in some form must be given; the patent fly catchers ought to furnish a supply of dead flies that could be used to advantage, and where possible, a small plot of ground should be made very rich and then kept soaked with

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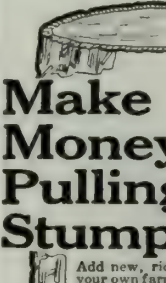
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water. This will grow earthworms as the ground can be turned over with a spade every few days. And when a supply of these natural foods are lacking give an extra feed of curd and chopped onion top, or a nice custard just as you would make it for yourself. Poults make feathers very fast and so require more protein than birds that feather more slowly. But there is nothing that responds to good feed and care quicker so the feeding should be a pleasure.

The stumbling block of most turkey raisers is first in breeding, second lice and third leaving too many together so that they crowd and bring on roup and other troubles. Small flocks well cared for bring in more money for less expense and less trouble than large flocks neglected. Keep after the lice eternally, only by preventing them from getting a foothold can you hope to keep the young flock growing and healthy. To the man who inbreeds turkeys there is no use in saying anything, he simply takes his chances and if he comes out a winner it is a lucky chance; if he comes out a cropper well he gets what he ought to have expected anyway. If you can tide turkey chicks over six weeks they are hardier after that than any kind of fowl, so that it really pays to go to some extra trouble when you can practically turn them adrift after the "red begins to show."

CAPONIZING TURKEYS.—R. W. W., Popes Valley, asks, "Is caponizing turkeys a success?" I have no personal knowledge that it has even been done; neither can I find any information on the subject, the only capons mentioned in any work being cock birds of common poultry. But if it was tried it must be done when the young turks weigh from two to three pounds, no old birds would survive the operation. The best tools are the improved "Pillings"; no others are quite as good.

A FRUIT AND POULTRY RANCH.

Written for the PACIFIC RURAL PRESS.]

Specializing with fruit is very likely the most hazardous industry that one finds, in the farming business, and while the larger grower can oftentimes make up for the poor years, by harvesting good crops in favorable years, the small grower usually has to be sure of some income every year, and for that reason finds it advisable to do more diversified farming.

Poultry enters into the other farm work, on the smaller place, so nicely that in most of our large fruit growing sections one finds the smaller farmer depending to a large extent upon that part of the work, and sometimes it works out in such a way that the poultry becomes a headliner and the fruit only a second consideration.

Such was the case with B. W. Barrett, of Hollister, San Benito county, who started in the fruit and poultry business on 10 acres of land, adjoining the town of Hollister, about 10 years ago.

Peaches and prunes were planted on the land and while waiting for them to come into bearing, it was decided to raise some poultry, to help defray the running expenses.

Since that time the trees have come into bearing, but instead of carrying the poultry as a side line they have gradually been increased until at present there are 3000 laying hens on the place, so that it is hard to say which is the more important.

Without going into details, as to how every chick is raised, for as Mr. Barrett says, "that is something every man should learn by experience," it should be said that by carrying on the work in this way, the 10 acres is sufficient to provide a good income to the owner.

The hens are run on the colony plan, about 400 in each lot. Houses are built sufficiently large to accommodate that number and large runs are fenced off in the orchard. This helps in two ways; first, by furnishing ample shade in the warm weather and secondly, the hens do most of the manure spreading.

During fruit picking season the hens are cooped into smaller runways, so as not to interfere with the harvesting. It is not hard to see how the trees and land are benefited by this plan, as the trees not only have a more thrifty appearance, but what is more important, the fruit yield itself is larger than on adjoining orchards, that do not have the benefit of such liberal manuring. In fact, the manure from the poultry, if conserved, properly fertilize a much larger acreage for in this way the weather leaches out a great deal of the fertilizing value of the manure.

The only feeds grown on the ranch, are alfalfa, kale, beets and other green feeds and these do not interfere in any way with the orchard operations.

By hiring one extra man, all of the time, and a little extra help during the rush season, the owner is able to take care of the place and as before stated, finds the returns are satisfactory for a comfortable living and there are very likely others, so situated, who could profitably follow his plan.

Like others who have followed poultry raising, it has been found that in order to be successful one must cull out the drones and in this respect it should be said that Mr. Barrett expects to have his flock built up to a 144 eggs per year, standard, and stated that he considered the present prices of feed and eggs demand such a standard, at this time, if the undertaking is profitable to any large degree.

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The Home Circle.

Good Feeding and Divorce.

Addressing a mass meeting of men at Yonkers, N. Y. lately Dr. Wiley, former chief chemist of the United States Department of Agriculture, advocated the removal of manufacturing plants from cities to rural districts as the best solution of the problem of urban congestion.

Dr. Wiley preached his gospel of good food and good cooking to a large audience of men. Exempting his own wife, whom he said he "acquired late in life," he declared that American women, as a whole, are "the worst cooks in the world."

"We have the most abundant and palatable food in the world," said he, "and yet spoil more of it in the kitchen than any other country or all other countries."

Good food and good cooking are preventives of divorce, declared Dr. Wiley. Last summer he sampled the menu of French peasants, and from that experience was born this question: "Who ever heard of divorce in rural France?"

"You can no more drive a man away from a good table than you can a cat," he continued. "And if you do, he will come back. The way to keep husbands at home is to feed them well."

The Value of a Name.

The editor of a great magazine sent for a certain author who had submitted an unsolicited manuscript.

"I am glad to make your acquaintance, sir," said the editor enthusiastically. "The story you sent is perfectly splendid. But why use a nom de plume? Let us publish it over your own name and it will make you famous."

"I'm not after fame," objected the author. "It's money I want."

"But you'll get just as much money in either case."

"No, I won't. If I publish it over my own name, my wife will get the money."—Cleveland Plain Dealer.

Rice Chartreuse.

Line a greased pudding dish 1 inch thick with cooked rice, 1 lb. beef ground fine, 1 teaspoon salt, ½ cup gravy or milk, ½ cup bread crumbs, 1 egg, onion juice and paprika. If desired more spicy, add a pimento and Worcestershire sauce. Pack this mixture in the mould and cover with rice. Bake ¾ of an hour for cooked meat. Serve with tomato sauce composed of 2 tablespoons butter, 1 tablespoon flour, and 1 cup of strained cooked tomato—pepper and salt.

Brownies.

2 squares Bakers' choc. melted, ¼ cup butter, 1 cup sugar, 1 cup flour, teaspoon vanilla, ½ cup Eng. walnuts. Mix as any ordinary cake adding chocolate and nuts last—bake in bread tin in moderate oven 20 minutes. To serve, cut in inch strips. Very good for afternoon tea.

Welsh Rarebit.

To a heavy white sauce, composed of 4 tablespoons flour—4 tablespoons butter and 1 cup of milk, add 1 cup grated cheese, 2 teaspoons lemon, ½ teaspoon Worcestershire sauce and 2 cups milk and a trifle of onion juice.

A Yankee tourish noticed an Irish farmer was having trouble with his horse. It would start, go slowly for a short distance, and then stop again. Thereupon the farmer would have great difficulty in getting it started. Finally the Yankee approached and said:—

"I say, Pat, is your horse sick?"

"Not as I know of."

"Is he nervous?"

"No, but he is so afraid I'll say, 'Whoa!' and he won't hear me that he stops every once in a while to listen."

An old Scotch lady had the habit of driving to church. Her coachman, when he considered the sermon nearly at an end, would slip out quietly to have the carriage ready. One Sunday, John, after hanging about the door, grew impatient. Creeping down the aisle toward his mistress, he whispered, "Is he no near dune yet?" "Dune!" returned the old lady, in high indignation, for her patience had long been exhausted, "he's dune half an hour since, but he'll no stop."—Ex.

The recent death of Lord Wolseley has brought out many anecdotes. On one occasion, as the soldiers were dining and the orderlies were hastening back and forth with pails of steaming soup, Wolseley stopped one, and ordered him to remove the lid of his pail. The man promptly obeyed. "Let me taste it," said the general. "But"—began the orderly. "Let me taste it, I say!" and he tasted it. "Disgraceful!" he exclaimed. "It's for all the world like dish-water." The orderly saluted. "That's what it is, sir!" he said.

Three Irishmen espied a box of money on the edge of a dangerous cliff. It could be reached only by a "human bridge." Mike grabbed an overhanging rock. Larry climbed over Mike and clung to his feet. Pat slid down over the two and was about to gain the coveted prize when Mike at the top, shouted, "Hold tight to me, boys, 'till O'i spit on me hands."

"I asked her if her husband smoked," said the woman with an inquiring mind, "and what do you think! She said she didn't know!"

"I don't see what difference it makes to you."

"Oh, I don't care whether he smokes. I wanted to find out if he kisses her."—Washington Star.

School Mistress—"You dirty boy! Why don't you wash your face, and not let it show what you had for breakfast this morning?"

Small Boy—"What was it?"

School Mistress—"Eggs."

Small Boy—"Wrong! Eggs was yesterday."

Elihu Root was cross-examining a young woman in court one day.

"How old are you?" he asked.

The young woman hesitated.

"Don't hesitate," said Root. "The longer you hesitate the older you are."—Ladies' Home Journal.

"Johnny," said the teacher, "who were the two strongest men of olden times?" "Samson and Hercules." "Can you tell any thing about them?" "Oh, yes. Samson was a regular Hercules."—St. Louis Star-Sayings.

Flo—"I was so confused that I do not remember how many times he kissed me."

Jane—"What! With the thing going on right under your nose!"

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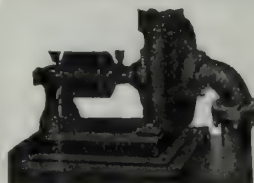
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Our Young Folks

The Unbendable Doll.

Little Nancy Martin's father was a farmer, and his farm was way up in the hills, many miles from a village. Nancy's father and mother did not go to the village often, for it was a long, long drive. When they did go, there was a long list of necessary things to buy—flour, sugar, tea, coffee, pepper, and such things—and, when these were bought, there was very little money left for Nancy's mother to buy anything for her little girl, sometimes

only a penny for a stick of candy.

But Nancy did not mind. Her mother picked out the kind striped with colors, so the candy was pretty to look at as well as good to eat, and Nancy made it last a long time by eating only a little bit each day.

Nancy did not have things to play with, such as most children have. Why, her doll, even, was just a wooden doll that only could be made to lie down or stand up. It could not sit down at all, nor be cuddled up snug in Nancy's arm, just because it was so stiff and wooden. Nancy loved her wooden doll, though, but she often wished Claribel were more loving. Nancy thought that if Claribel would bend even a very little, she would feel that Claribel really loved her, too. But no! Claribel would not bend so much as a finger, but was just as wood knows how to be.

Just before Nancy was six years old, her Uncle Lester, from a far-away place, came to visit her father. Now Nancy had never had a birthday present. There were two reasons for this. One was because the farm was so far away from a place to buy birthday presents, and another was that there was so little money to buy them with. Nancy's mother always made her a birthday cake and frosted it, and, as frosted cake was a rare food in her home, Nancy thought her birthday treat good enough for a queen.

When Uncle Lester found that Nancy was to have a birthday soon, he said to her:

"What present do you expect for your birthday, Nancy?"

"Oh," said Nancy, "I don't have birthday presents. I just have Christmas presents."

"I thought all little girls had birthday presents," said Uncle Lester, "but tell me, if you were going to have a birthday present, what would you like?"

Nancy looked down at stiff Claribel whom she was trying to cuddle while she talked to this new uncle.

"I would want—I would like," she said slowly, "if I was to have anything, I would like a bendable doll."

"What kind of a doll did you say?" asked Uncle Lester, for he did not know much about dolls.

"A bendable doll," repeated Nancy. "I love my Claribel, but I think she doesn't love me, because, you see, she won't bend. Just look."

She showed Uncle Lester how impossible it was to cuddle Claribel, for, while Claribel would lie down very straight or stand up like a very stiff piece of wood, she would not bend the least bit.

"What would you do with Claribel if you had a bendable doll?" asked Uncle Lester.

Now, though Nancy had wished often for a bendable doll, she had not thought what would become of Claribel. Surely, she would not like to part with her dear Claribel. After a long time she said:

"I would like a bendable doll, but I would like it to be Claribel, too."

Uncle Lester wished he had thought to bring his little niece a bendable doll, but he did not say so. He laughed, patted Nancy on the head, and went away to the field where Nancy's father was working.

The night before Nancy's birthday, when she was fast asleep in her bed with stiff Claribel cuddled up to her as much as Claribel could be made to cuddle, Uncle Lester came softly into the room, and, without waking Nancy,

took Claribel and went downstairs to the kitchen, and laid Claribel on the table where there was a gimlet, a sharp jack-knife, some bits of wire, and some small wooden pegs.

Nancy surely would have cried and cried if she could have seen what was happening to her Claribel, for Uncle Lester took the sharp jack-knife and cut off Claribel's head, and her arms and her legs, and there lay Claribel all cut to pieces. Then Uncle Lester took the gimlet and bored a hole in Claribel's neck and another in her body and fastened the head back in place with one of the wooden pegs, and now Claribel's head could be turned one way and the other, just like any other doll. Then he made more holes, and with the wire and wooden pegs he fastened Claribel's arms and legs back on her body, and there she was all together again, as bendable a doll as any doll ought to be.

Then Nancy's mother put the nightgown on Claribel, and went up softly to Nancy's room and put Claribel in bed again, and she cuddled down to Nancy just as nice as any bendable doll could cuddle.

Nancy could dress herself, and, when she woke in the morning, she hurried to dress because it was her birthday morning. Then she went to take Claribel to dress her, and—why, Claribel, instead of staring straight at the ceiling, had her head turned and was looking right at Nancy. She caught her up; and wasn't she surprised! for Claribel had turned into a bendable doll, a real bendable doll.

Then she heard someone laugh, and she looked round, and there was mother and father and Uncle Lester looking in at the door. Of course, Nancy had to hear all about how Claribel, her own dear Claribel, had been changed into a bendable doll. Then they went down to breakfast, and there was a nice new dress for Claribel, and a little chair just large enough for her to sit in, a chair that Uncle Lester had made with that sharp jack-knife.

Nancy gave a happy laugh, and sat Claribel in the chair.

"Oh, Uncle Lester," she said. "I'm so glad you thought to doctor Claribel and make her bendable. I couldn't

love any other doll as I do Claribel, and, now that she is bendable, she can love me as much as I do her."—Elizabeth F. Wade.



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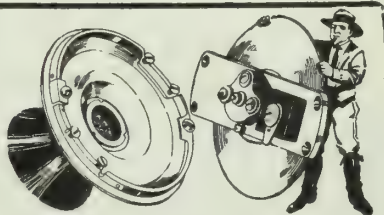
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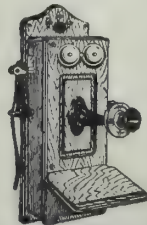
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Company

704 Bryant St., San Francisco

Save Money On What! Second Hand Pipe

By buying at the

ALEXANDER PIPE CO., Inc.
256 North Point St., San Francisco, Cal.

THE MARKETS

San Francisco, Feb. 11, 1914.

Cereals.

WHEAT.

Business is rather quiet this week in all the coast markets, as few buyers are willing to meet the recent advances. Holders are taking a firm view, however, and some grain has been sold here at higher prices than were quoted last week.

California Club, cti....	\$1.60	@1.62½
Forty-fold	1.62½	@1.65
Northern Club	1.60	@1.62½
Northern Bluestem ...	1.70	@1.75
Northern Red	1.60	@1.70

BARLEY.

Future prices have dropped, and a large amount of speculative business has been done. While the decline in futures has brought about a further drop in the spot grain, but this has failed to arouse any special interest on the part of buyers, and business continues dull.

Brewing and Shipping. Nominal	
Choice Feed, per cti....	\$1.17½ @1.20
Common Feed	1.12½ @1.15

OATS.

Red feed oats have been marked down a little, as there is considerable stock on hand and the demand is light, though seed stock is firm. White oats are unchanged.

Red Feed	\$1.50	@1.60
Seed	2.00	@2.10
Gray	Nominal	
White	1.35	@1.40
Black Seed	Nominal	

CORN.

There is nothing new in local prices, and business in all lines is quiet, with very moderate offerings on the spot.

California Yellow	Nominal	
Eastern Yellow	\$1.77½ @1.82½	
Eastern White	Nominal	
Egyptian	1.75	@1.85
Milo Maize	1.75	@1.80

RYE.

There is very little demand at present, and the limited offerings are held steadily at the old quotations.

Rye, per cti....	\$1.45	@1.50
Seed	1.65	@1.75

BEANS.

Bayos have been marked up a little, and all descriptions are very firmly held, with little stock remaining in the country and only moderate supplies in the hands of local dealers. The shipping demand for general lines is coming out fairly well, though not unusually active, and everything is expected to be well cleaned up before the new crop comes in. Limas are said to be pretty closely cleaned up, the entire supply on the Coast available for consumption being not over 190,000 bags, against 340,000 bags a year ago, while the growers, with only about 75,000 bags left, are holding for more than the current prices.

(On wharf.)

Bayos, per cti....	\$5.15	@5.25
Blackeyes	4.25	@4.35
Cranberry Beans	4.00	@4.25
Horse Beans	1.90	@2.15
Small Whites	4.75	@5.00
Large Whites	3.50	@3.60
Limas	5.10	@5.20
Pea	Nominal	
Pink	3.00	@3.25
Red Kidneys	5.00	@5.15
Mexican Red	4.00	@4.15

SEEDS.

Buying of miscellaneous lines is becoming a little more general, but the movement is not yet very heavy, and prices stand as before.

Alfalfa	12½ @15	c
Broomcorn seed, per ton..	Nominal	
Brown Mustard, per lb....	3¾	c
Canary	7 @ 7½	c
Hemp	2½ @ 3	c
Millet	2½ @ 2¾	c
Timothy	7½ @ 8	c
Yellow Mustard	Nominal	

FLOUR.

The gradual upward movement of wheat in the last few months has forced a slight advance of flour prices, the first change in a long time. Most consumers are fairly well supplied for the present, and the demand is only moderate.

Cal. Family Extras ...	\$5.80	@6.20
Bakers' Extras	4.80	@5.40
Superfine	3.90	@4.20

Hay and Feedstuffs.

HAY.

The hay market shows comparatively little feature at present, the only noticeable change being a very slight increase in arrivals. Offerings from the country, as formerly noted, are very large, and prices are weak, with little prospect of improvement, according to local dealers. Local buyers evidently do not anticipate any advance, as it is found rather difficult to clean up the arrivals locally from day to day, and nobody is putting in any large supplies.

No. 1 Wheat, or Wheat and Oats	\$13.50 @14.50
do No. 2	11.00 @13.00
Lower grades	9.00 @11.00
Tame Oats	11.00 @15.00
Wild Oats	9.00 @12.00
Alfalfa	8.00 @12.00
Stock Hay	7.00 @ 9.00
Straw, per bale.....	75 @ 95c

FEEDSTUFFS.

The situation in this line continues weak, all changes for some time having been downward. Rolled barley has taken another drop this week, and rolled oats are also a little lower, as offerings in both lines are fairly large, and holders are becoming anxious to clean up.

Alfalfa Meal, per ton....	\$18.00 @19.00
Bran, per ton	24.00 @25.00
Oilcake Meal	34.00 @35.00
Cocoonut Cake or Meal..	25.00 @26.00
Cracked Corn	41.00 @42.00
Middlings	33.00 @34.00
Rollod Barley	25.50 @26.00
Rollod Oats	30.00 @31.00
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

Few changes of much importance are noted this week. Southern stock is not appearing in as large quantities as a week ago, but the receipts are still fairly large, and as most of the stock is unattractive prices show no special firmness. String beans are cleaned up for the present, and peas are a little lower, peppers and eggplant stand about as before. There are enough Mexican tomatoes to meet all requirements, and prices are lower. Asparagus is not yet coming in regularly, though an occasional small shipment brings high prices. Mushrooms, lettuce and rhubarb are all a little higher, while celery is offered freely at a decline. Cauliflower has been marked up again, while carrots are a little lower.

Cabbage, per cti....	\$1.00 @ 1.25
Cauliflower, dozen	25 @ 50c
Green Peppers, lb....	3 @ 4c
Carrots, per sack	40 @ 50c
Green Peas, Southern, lb.	5 @ 10c
Tomatoes, Mexican, box..	2.25 @ 2.75
Eggplant, lb.	3 @ 6c
Sprouts, lb.	4 @ 6c
Celery, large, crate.....	1.25 @ 1.75
Rhubarb, box	1.25 @ 2.00
Lettuce, crate	75c @ 1.00
Mushrooms, lb.	10 @ 16c
Asparagus, lb.	75c

POTATOES, ONIONS, ETC.

Nearly everything on the list is a little lower than at last report, as the extreme prices seem to have been a little higher than conditions justified. Potatoes have been arriving freely from Oregon and other districts, and holders are anxious for a little more movement; while there appears to be a fair stock of onions still in storage. Australian onions, however, are offering at \$4, and Oregon stock is getting scarce.

Potatoes:	
River Whites	\$1.00 @ 1.25
Sweet Potatoes, per cti....	1.15 @ 1.35
Oregon Burbanks	1.00 @ 1.25
Onions: Yellow River, cti.	2.50 @ 2.75
Oregon	3.25 @ 3.35
Australian	4.00
Garlic, per lb.....	7 @ 10c

Dairy Produce.

POULTRY.

Arrivals of both local and eastern stock have been moderate for the last few days, but the demand has dropped

off considerably, and the market is easier for most descriptions than for some time past, prices being shaded on broilers, hens and young roosters.

Large Broilers	23 @24	c
Small Broilers, per lb....	26 @27½	c
Fryers, per lb.....	20 @22	c
Hens, extra, per lb.....	18 @19	c
Hens, large, per lb.....	18 @19	c
Small Hens, per lb.....	17 @18	c
Young Roosters, per lb..	18 @20	c
Squabs, per doz.....	2.00 @ 2.25	
Geese, per pair	2.50 @ 3.50	
Ducks, doz.	6.50 @ 8.00	
Turkeys, live, per lb....	20 @22	c
do dressed, choice....	24 @26	c

BUTTER.

Prices have been going down steadily for the last week, as shipments from producing districts are larger than for some time. The drop on extras amounts altogether to 6c., and there is no present indication of firmness, though the price is far below that of a year ago.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extras ...	30 29½ 29 28 27
Firsts ...	29 28 28 28 27 25

EGGS.

A drop of 9c. during the week has brought extras down about to last year's level. With favorable weather, the production is steadily increasing, and the receipt of Chinese eggs may also have something to do with the decline.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extras ...	35½ 35 35½ 33 30½ 26½
Selected	
Pullets	35 34 34 32 30 25

CHEESE.

So far the output has not increased to any great extent, and prices are on a higher level than a week ago, though it is not expected that present prices will long be maintained. Fancy California Flats, per lb...19 c New Young Americas, fancy...20 c Monterey Cheese 17½ @19½c

Deciduous Fruits.

A good many of the storage apples are beginning to deteriorate, and some off-grade stock has been disposed of below the ruling quotations. Sound stock, however, is scarce, and prices are firmly held on all desirable offerings. Newton pippins showing an advance. Other lines are rapidly cleaning up, though there is considerable Oregon stock offered.

Apples: Spitzenbergs ...	\$1.25 @ 1.70
Greenings	1.00 @ 1.20
Bellefleur	1.15 @ 1.50
Newtown Pippins	1.50 @ 2.00

Dried Fruits.

The market for spot dried fruits remains quiet in most lines, though there has been a fair movement of peaches, and packers are inclined to take a little firmer stand as to prices, though there has been no advance in the offers made for country holdings. A little more interest in apples for the export trade has also been noted, but this line is pretty well cleaned up in the country. Prunes are getting more attention, and a firmer attitude on the part of packers seems to be bringing out a better eastern demand. Large sizes are particularly scarce, and if the demand continues somewhat better values may be realized for such odd lots as remain in the country. Raisins are moving off slowly but steadily. The most important development of late has been the placing of contracts for this year's crop, some good sized purchases having been made at 4½c. for peaches, 3¾c. for figs, and 7c. for apricots. About 500 tons of peaches are said to have been bought, but the demand seems to have quieted down now, and it is uncertain whether these prices are a real index to new crop values. The New York Journal of Commerce says:

California prunes are reported to be stronger on the Coast, with large sizes scarce and tending higher. On the spot here the tone of the market is strong, and efforts of buyers to secure goods at a concession from quoted prices are unavailing. They are gradually raising their bids but apparently are not high enough yet to get the goods. All sizes appear to be wanted, but the demand is strongest for 40s, 50s, and 60s, and the extreme small

counts. Mail advices from the Coast report a stronger and more active market for peaches, but on the spot here business is still confined within narrow limits, and, while the market is strong, no appreciable improvement in quotations can be recorded. Apricots are scarce and firm in all positions, though locally comparatively little business is being done at present.

California seeded raisins are still slow of sale here, and prices are nominal. The bakers' supply trade is reported to be taking hold of the seedless varieties, and the trend of prices is upward, particularly on Muscatels and Thompsons. Loose Muscatels are reported to be closely cleaned up here and sparingly offered from the Coast. The market on this variety is stronger. Imported Sultanas are firmer owing to scarcity.

Evap. Apples, 1913	6½ @ 8	c
Apricots, 1913	10 @13	c
Figs: White	Nominal	
Black	Nominal	
Calimyrna	4½	c
Prunes, 4-size basis	5 @ 6	c
Peaches	4	c
Pears	6 @ 7	c
Raisins (In sweatbox):		
Loose Muscatels	4	c
Thompson Seedless	4½	c
Seedless Sultanas	4½	c

Citrus Fruits.

The latest eastern auction reports are to the effect that oranges are somewhat higher on good stock, also that lemons are advancing. The great mass of auction sales for the past few weeks, however, have shown very poor returns—in many instances they were so low as to mean red ink for the producer. On good stock fair prices have been and are being secured. Most of the low priced fruit shows heavy decay, caused by improper handling and soft peel, caused by the rains. Heavy shipments are going east and it is feared that good prices on the average will not be secured before the middle of next month.

On the New York auction, Monday, Feb. 9th, navels averaged from \$2.30 down to 70c. per box, and these prices were about what were paid at the various other auction points that day. At the Los Angeles auction on Feb. 9th, four cars were sold at prices ranging from \$1.05 up to \$1.30 per box, f. o. b. California.

Total shipments from California this season up to Feb. 8th were: Oranges 10,120 cars, of lemons 442 cars; to same date last year shipments of oranges were 7529 cars, and of lemons 831 cars.

Limes have been marked up again, but no quotable changes are noted in other lines at San Francisco. Oranges, however, are a little firmer in the local market, with a comparatively active demand and smaller receipts than for some time past.

Oranges: Navels	75c @ \$2.00
Tangerines, crate	75c @ 1.25
Grapefruit, seedless	1.25 @ 2.50
Lemons	1.75 @ 3.50
Limes	5.50 @ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

The nut market is dull, as usual at this season, the consuming demand being light. There is a demand in some quarters, but supplies are very light.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Langueodoc	15¾c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HOPS.

A number of small sales are reported, and the remainder of the California holdings is gradually cleaning up, though the prices received on recent sales have been slightly under the former level. A number of large contracts have been closed for 1914 hops in the Sacramento district.

1913 crop	18½ @21	c
1914 crop	14 @16	c

HONEY.

Prices in the local market are maintained at the same level as for some time past, but there is very little demand, and prices are only maintained by the lack of additional supplies in producing districts.

Comb, white	15	@16	c
Amber	11	@12	c
Dark	9	@10	c
Extracted: White	8	@9	c
Amber	6 1/2	@7	c
Off Grades	5	@6	c

BEESEWAX.

Business continues dull here, as there is no local demand of any importance, and offerings have been very small for some time.

Light	30	@31	c
Dark	28	@29	c

Live Stock.

Prices in the local market are steadily held at last quoted. There is a steady movement of feeders in the country, and a few large lots have been brought from Mexico and the southwest for the California ranges.

Steers: No. 1	7 1/4	@	7 1/2 c
No. 2	7	@	7 1/4 c
Cows and Heifers: No. 1	6 1/4	@	6 1/2 c
No. 2	5 3/4	@	6 c
Bulls and Stags	2 1/2	@	5 c
Calves: Light	8 1/4	@	8 1/2 c
Medium	8	@	8 1/4 c
Heavy	6 1/2	@	7 1/2 c
Hogs: Grain-fed, heavy	7 3/4	@	8 c
150 to 250 lbs.	8 1/4	@	8 3/4 c
100 to 150 lbs.	8 1/4	@	8 1/2 c
Prime Wethers	5 1/2	@	5 3/4 c
Ewes	4 1/2	@	5 c
Lambs	6 1/2	@	7 c

DRESSED MEATS.

Steers	12	@	12 1/2 c
Heifers	11 1/2	@	12 c
Veal, large	12	@	13 c
Small	13 1/2	@	14 1/2 c
Mutton, Wethers	11	@	11 1/2 c
Ewes	10	@	10 1/2 c
Suckling Lambs	13	@	13 1/2 c
Dressed Hogs	13 1/2	@	14 c
Colts	25	@	50c
Dry	75	@	2.00

HIDES.

While the market continues quiet, there is enough demand to prevent any accumulation, and in view of the limited offerings prices are steadily held.

Heavy Steers, over 56 lbs	15	c
Medium	14½	c
Light Steers, under 48 lbs	14½	c
Heavy Cows, over 50 lbs.	14½	c
Light Cows, 30 to 50 lbs.	13½ @ 14½	c

HIGHEST MARKET PRICES

for your eggs, live or dressed turkeys, chickens, dressed calves or hogs, butter, honey, grain, hay, potatoes, dried fruit, etc. Consign all shipments to the old reliable firm of
W. C. PRICE & Co., General Produce and Commission Merchants, 211-215 Clay St., San Francisco.
 Est. 1876.

TRUCKEE WINTER CARNIVAL

GRAND ICE PALACE
SKATING PAVILION
DANCING HALL
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TOBOGGAN SLIDE
SKIING, SLEIGHING

\$9.30 Reduced
Round Trip

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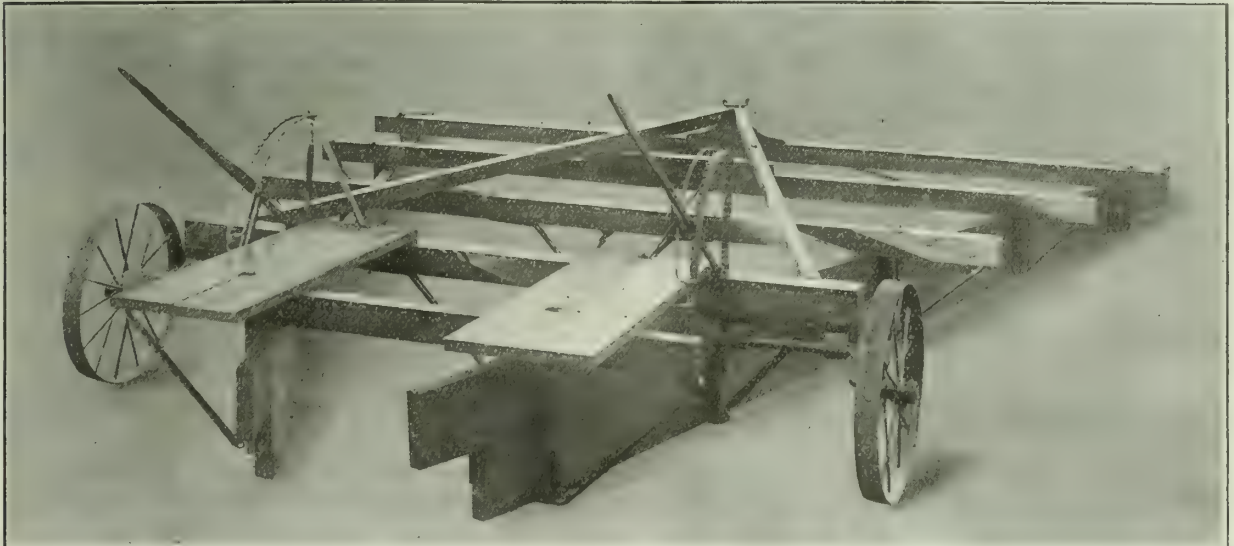
Tickets on Sale Every Friday
During Season

SOUTHERN PACIFIC HOTEL AND RESTAURANT.

Comfortable Rooms and Good Meals
at Reasonable Rates.

SOUTHERN PACIFIC

The Attraction of the Farming World



The Schmeiser Land Checker and Leveler

Levels the land and leaves it perfectly smooth. Makes perfectly uniform, straight checks. Does the work better and quicker than any other implement or method, and

SAVES TWO-THIRDS (2/3) THE COST

WRITE FOR PARTICULARS

SCHMEISER MANUFACTURING COMPANY, DAVIS, CAL.

Kip	14 1/2	@	15 1/2 c
Veal	17 1/2	@	18 1/2 c
Calf	17 1/2	@	18 1/2 c
Dry—			
Dry Hides	25 1/2	@	26 1/2 c
Dry Kip, 10 to 15	24 1/2	@	25 1/2 c
Dry Veal, 5 to 10	29 1/2		
Dry Calf, 7 down	29 1/2		
Horse Hides—			
Salt: Large			\$2.75
Medium			2.25
Small			1.00

WOOL.

The wool market remains dormant here, though some contracting for the spring clip is being done in Nevada and the north.

Northern mountain	7	@	9 c
Southern mountain	7	@	8 c
Defective	4	@	6 c
Lambs	7	@	10 c

HORSES.

Only a few small lots of country horses, mostly delivery and wagon stock, with a few chunks, have appeared in the local auction market this week. Buyers are taking a little more interest, but there is no real activity to the market, and it is rather difficult to get satisfactory prices.

Heavy drafters, 1700 lbs. and over	\$275	@	\$325
Light Drafters, 1500 to 1650	225	@	250
Chunks, 1350 to 1500	150	@	200
Wagon Horses, 1250 to 1350	100	@	150
Delivery Horses, 1050 to 1250	100	@	125
Desirable Farm Mares	75	@	100

MULES.

1200 lbs.	\$200	@	250
1100 lbs.	150	@	200
1000 lbs.	125	@	175
900 lbs.	75	@	125

PUBLISHER'S DEPARTMENT.

A letter was received last week from J. S. Ricard, the "Padre of the Rains" of Santa Clara, stating that he would like to have the PACIFIC RURAL PRESS receive any donations that the farmers of the state may wish to make towards buying the telescope which the editor spoke of in a recent issue. One of our readers at San Jose has sent in \$2 to apply on the telescope, which amount has been forwarded to Father Ricard. To all others who may wish to subscribe to this telescope fund we would suggest that the money can be sent direct to Father Ricard at Santa Clara, or if preferred we will receive the money and forward it to him.

In this issue we have several articles upon tractor farming. They ought to prove interesting and instructive, as this new, big way of doing things appeals to the imagination. However, only a very small proportion of the farmers will use tractors for many years to come, the great majority will continue to use horse power; they will make successes as great in the future as in the past and will lead in many lines of agriculture. Intensive farming means, as a rule, small implements and small acreage.

Intensive farming usually means fruit and vegetables, and those who expect to make the greatest success in these lines must use not only brains and muscle, but also avail themselves of every source of information. The book on "California Vegetables and How to Grow Them" is one of the best practical sources of knowledge and can be had by writing this office and enclosing a check for \$2. The season for vegetable planting is near at hand and the book will prove invaluable at this time.



JACKSON DEEP WELL TURBINE PUMP

is the most efficient pump of this type on the market and the simplest in construction. Every JACKSON pump means the best possible pumping economy.

The JACKSON is a pump of the highest service giving quality; it's just the pump you need on your farm.

Bulletin No 47-C on request.

BYRON JACKSON IRON WORKS

357-361 Market Street,
San Francisco, Cal.

Los Angeles:
212 N. Los Angeles St.
Works:
West Berkeley, Cal.

Poultrymen Pleased

By letters reaching this office with pleasing frequency, the
PACIFIC RURAL PRESS

Pulls Like a Tractor For Our Poultry Advertisers

Read the following letters which arrived just recently:

Dixon, Cal., Jan. 10, 1914.
 Pacific Rural Press.

Your paper was certainly the means of turning me in many valuable orders for my stock.

I am, very respectfully,
 R. A. HOLDRIDGE.

DIABLO POULTRY FARM
 Concord, Cal., Feb. 1, 1914.
 Pacific Rural Press.

Replying to yours of the 30th ult., would like to have the ad continued. Have had any number of inquiries through the Press and must say that I am surprised.

Yours truly,
 C. J. STRUBY.

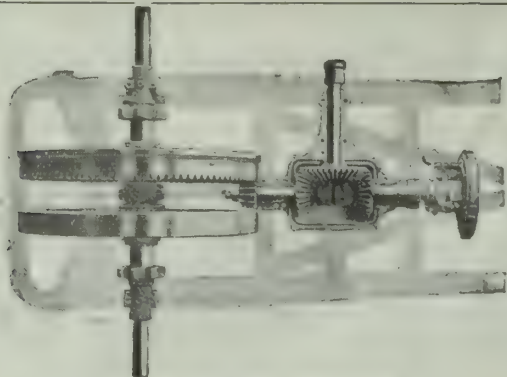
Oroville, Dec. 22, 1913.
 Pacific Rural Press.

I have already had some high-class returns from my "liner" in your poultry column and desire to give you a strong testimonial if you have any use for same.

Yours very truly,
 E. A. JACKSON.

If you have baby chicks, breeding stock or eggs for hatching for sale, a "liner" in our Poultry Breeders' Directory will find customers for you. Display space quoted on application. Address Advertising Dept.

PACIFIC RURAL PRESS
 420 Market St., San Francisco.



1914 Caterpillar Transmission



Improvements for 1914

NEW TRANSMISSION —Three-bevel-gear reverse substituted for shifting shaft previously used. See cut above. Gears are heat-treated, hardened and ground, steel inclosed in oil-tight, dustproof gear case. They revolve in oil constantly. Gears are shifted similar to an automobile.

NEW TYPE CATERPILLAR TRACK —Chain pin sleeves, pin holes in track side bars, specially machined for close fit. Top rail of track machined to perfectly flat surface. Pin sleeves larger diameter, one inch longer. "L" head pin instead square head. Steel track pins and bushings turned, hardened and polished. Side bars of track especially hardened steel. Truck wheels semi-steel, chilled face, bronzed bushed, finished hubs. Case hardened gudgeon pins with hardened steel washers to assume side thrust.

NEW FRAME —Super-frame and motor lowered 6 inches, thereby lowering center of gravity and avoiding vibration. Clearance under tractor increased 1 1/4 inches. 4x4x1/2-inch angle used in "U" frame instead 4x3x3/8-inch. A 10-inch channel carries the box of main drive pinion instead of 4x3x3/8-inch formerly used. Two 3/4x4-inch trusses extend from motor back to 10-inch channel at rear. Two braces inserted from "U" frame on each side down to "H" beam. Whole frame additionally braced by "A" braces of 3/4x4-inch material.

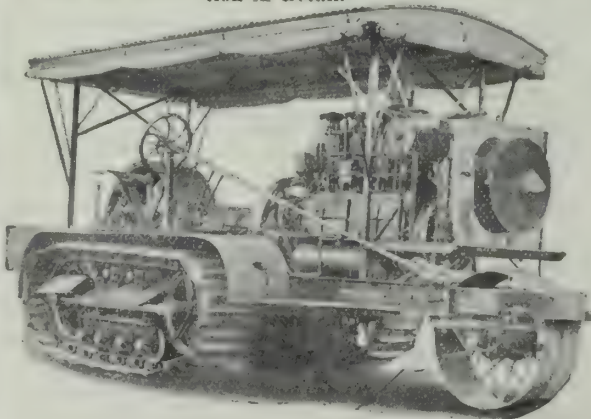
NEW STEEL PLATFORM —A new steel deck is bolted to the frame, affording greater rigidity to tractor and adding strength to the frame. It completely covers the track and extends alongside the motor, providing a running-board for engineer when making adjustments. All oil cans, tool boxes, etc., have been removed from deck, presenting clean, flat surfaces with no obstructions.

SHAFTS AND SPROCKETS —Rear track in one solid piece, 3 7/16 inches diameter. Track sprockets and first motion chain sprocket coupled together on steel sleeve and journal, one sleeve turning loose on bronze bushing, the other fastened to shaft, thus obtaining necessary equalization of motion. New track sprockets are semi-steel, cast in a chill, thus obtaining smooth, hard surface for track pin sleeves. They are also ring sprockets, facilitating repairs and reducing cost of replacements. Their face has been increased one inch in width, giving double wearing surface. The new front blank sprockets are made of steel, of larger diameter and one inch wider face. They are bronzed bushed with dust caps on each end of hub.

MOTOR IMPROVEMENTS —New and much stronger motor support substituted. Valve trouble has been eliminated by use of electrically welded valves of improved design, lighter construction and of special steel. Contour of cams changed for easier action on valve lifts and springs and lessening liability of breakage. Fly wheel is heavier. Force feed auxiliary oiling system for oiling cylinders installed, magneto shaft improved, a new design spark and throttle control evolved, gravity feed for fuel substituted for pump, and radiator changed to correct all leakage.

MISCELLANEOUS —Front wheel increased five inches in diameter and four inches in width, and new and stronger support provided. Use of spring drivers discontinued and spring draw-bar substituted. Two draw-bars are furnished with 1914 Caterpillar, a pendulum bar and a stationary bar eight inches above former. Pendulum bar lessens side draft and facilitates turning. A steel first motion chain substituted for malleable chain and upper sprocket made of .50 carbon crucible steel. It is also a ring sprocket. A new stationary attachment with a gear reduction of 3 to 2 is used, with cut steel gears running in oil. Shields have been placed over large bevel gear and pinion and main clutch to prevent danger of accident.

Send for Bulletin C1, Describing 1914 Construction in Detail.



Backed by Nine Years' Experience

This is our tenth year of Caterpillar building. We have learned how to build right—where others must guess and try again. We know from experience what material to use—we have built our 1914 model of the best we can get. It pays us and the customer.

California farmers use more Caterpillars than any other make—almost as many as all others put together. These owners like the Caterpillar. They buy again and again. One California customer, the American Sugar Beet Company, owns sixteen Caterpillars. Eighteen sugar beet companies of California own a total of fifty-nine Caterpillars.

The Caterpillar has no dead weight. It is simply built. Nearly all its power is turned into draw-bar pull. None is lost in complicated transmission, etc. Last fall at the Fresno Fair the Caterpillar outpulled an imitation Caterpillar which weighed four tons heavier and had higher rated horse-power. Official judges gave the decision.

You can be sure that the 1914 Caterpillar is built right. All materials and parts are inspected time and again, from the foundry to the paint shop. No flaws can pass. Future breaks are guarded against. There is quality in every part from master gear down to rivets. Read the specifications herewith.



Reg. U.S. Pat. Off.

Caterpillar Service Department

Our new Caterpillar Service Department shows that we really want to give you the best tractor service. Our obligation to the purchaser does not end when we ship the machine and receive the money for it. We want him to get out of that machine the work for which it was built and sold.

This department will inspect all Caterpillars in the field at no cost whatever to the owner. Expert Caterpillar engineers have been given automobiles and territories and instructed to go from machine to machine offering advice, pointing out proper methods of operation and explaining construction. As soon as each man's route is covered he will start again and keep on covering the same ground over and over. He will try, in hundreds of little ways, to help you make good.

We repeat, this service costs you nothing, after you have become a Caterpillar owner. No other manufacturers offer it.

Send for New Catalogue C 1

It explains 1914 construction. Tell us how many acres you farm and where it is. It will help us pick the right size of outfit for you. We furnish nearly everything for the farm—plows, disc harrows, scrapers, harvesters, etc.—all built extra strong for tractor work. You can get a catalogue describing each of them. Write our nearest branch.

See the 1914 Caterpillar at the power-farming show at Fresno, February 19th, 20th and 21st, and Marysville, March 5th, 6th and 7th. You can compare it there with twenty-five others.

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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 8.

SAN FRANCISCO, SATURDAY, FEBRUARY 21, 1914.

Forty-Fourth Year.

California's Leadership in Alfalfa.

[BY THE EDITOR.]

California has two main points of interest in the wonderful advancement of alfalfa as a forage plant for North America during the last half-century:

First, the relation of alfalfa to the agricultural development of California.

Second, the importance of California's gift of alfalfa in the development of animal industries throughout the North American continent.

What Alfalfa Has Done for California.—Of the debt which Cali-

to plow up at shorter intervals, either to get the advantage of rotation and the vastly greater product of other crops, which alfalfa prepares the land or to replace the old crop with younger and more vigorous ones.

In California the alfalfa plant now largely the basis of the following products of the State, as reported by the United States Department of Agriculture for 1912 and by the California State Dairy Bureau:

Dairy (product 1912)....\$ 32,160,078	Eggs (product 1909).....\$10,263,694
Live Stock (on farms)... 123,024,653	Honey (product 1912).... 729,793
Poultry (on farms)..... 3,844,526	

It may seem strange at first to credit eggs and honey to alfalfa, but things are rapidly moving that way. The egg product in the



The One Year Old Alfalfa on a Mixed Farm Near Fairmead, Madera County.

ifornia owes to alfalfa there is no exact measurement, because the recent progress of the plant in our agriculture simply outruns the statisticians. The records of the United States Census of 1910 show that in the preceding year alfalfa was grown on 19,904 farms, and the acreage of it was 484,134 acres; the product as hay and forage, 1,639,707 tons, valued at \$13,088,530. Since that date we have had four full growing seasons—during which settlement, irrigation extension, and subdivision of farming lands have proceeded more rapidly than during any preceding decade in our history. Estimates of the advancement of alfalfa since the Census report of 1909 vary between 50 to 100 per cent of increased area. It is certainly safe to estimate the standing of alfalfa as a California product in 1913 to be an acreage of three-quarters of a million acres and an annual product value of \$20,000,000 in the field where it grows, either for hay or pasturage. The market value would, obviously, be much greater. This field valuation includes a considerable acreage of young alfalfa and is reduced thereby. A conservative estimate of the field value of the annual product of a good stand of mature alfalfa would be \$40 per acre, and the continued profitable life of the plant on deep, open land, well irrigated and cared for, may extend to twenty years, though it is usually an advantage

alfalfa-growing districts is increasing rapidly, and even in the coast regions, where alfalfa is little grown, alfalfa hay and alfalfa meal enter largely into poultry rations. As for honey, which was formerly made on wild bee-pasturage, the chief products come now from the alfalfa fields of the irrigated valleys.

Without undertaking to elaborate the theme to weariness, it may be briefly and confidently declared:

First—That no single plant whatever (either herb, vine, or tree) is producing so great value in California as the alfalfa plant.

Second—That no single plant comes so quickly to the homemaker's help on irrigated land, or on suitable land under rainfall, than alfalfa, and none assumes so many forms of value.

Third—That no plant, save a vine or tree, endures so long in profitable service.

Fourth—That no plant is so good to fit land for every other crop known to the State.

What California Has Done for North America in Alfalfa.—Now that the interest in alfalfa covers the United States, and the plant is either established or undergoing trial nearly everywhere from

(Continued on Page 239.)

Pacific Rural Press

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Feb. 17, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maxim.	Minim.
Eureka	.12	24.54	28.83	66	42
Red Bluff	.10	24.37	16.13	70	38
Sacramento ..	.10	15.19	12.78	62	40
S. Francisco ..	.06	21.88	15.02	64	46
San Jose	.10	13.62	10.77	70	36
Fresno	.00	8.66	6.01	68	40
Independence ..	.00	11.14	5.90	62	26
San L. Obispo ..	.04	25.74	12.65	78	42
Los Angeles ..	.00	15.04	10.02	78	52
San Diego	.09	6.73	6.48	78	44

The Week.

The shaping of things for an unusually good year in California is proceeding gloriously. As we go to press this week we seem to be entering another rainy area, which is just about as good as it could be, for we have had about three weeks of clear skies, and the way field and orchard work has gone along has been simply delightful. The storms which the spot-prophet put down for us have been in some way shunted away eastward, and the blizzards and low temperatures which they have had east of the Rocky Mountains have fairly made our ears to tingle even in the reading of them. They have had a couple of earthquakes also on the Atlantic coast, which we do not begrudge them, since such phenomena are so far out of fashion on this coast that our common newspapers no longer even record them as interesting. We are having a grand winter; plenty of moisture and good openings for work between the storms; whether we get these things by the law or by the prophets does not agriculturally matter.

The Development of the Exposition.

We are not saying much about the grand and satisfactory progress which is being made in construction and other arrangements for the Panama-Pacific Exposition, because the common newspapers and the great picture magazines have notable advantages over us in frequency and style of issue, and they are keeping the reading public commendably well informed about them. It is out function to try to tell our readers how to do a little better farming so that they will have some money to spend for instruction and enjoyment at the great world event of 1915. Therefore we keep ourselves down to the construction of an additional bale of alfalfa hay or an additional sack of dried fruit and let others build the steel-frame palaces which even early as this are

rapidly approaching completion. And yet for fear some reader might think us blind to the wonders which are arising near us, we wish to declare clearly that the masterly manner in which the exposition is being advanced in all its manifold phases fills us with joy and pride in California and in Californians and the reason we do not say more about it is that we wish to use all our space for helps in farming believing that that is the expectation which our patrons place in us and for which they give us their good money so generously. Later on when the details of organization and arrangement for operation become available we shall naturally give much space to those affairs in which the agriculture of the State can become a leading factor in this greatest world-work of the commonwealth of California.

Legislating Cattle Into Existence.

The action of the Atlanta hotel stewards in boycotting veal because they thought it would give longevity to calves has been followed by a proposition in Congress to prohibit the killing of calves to increase the beef supply. That it is forbidden to do such a thing with a man's own property by the national constitution and that it is impossible to legislate how a man should do his farming, when he does not encroach upon the rights of another, seems to have been forgotten by our economic reformers. They are likely to be reminded of it quite forcibly though the ridicule they are incurring. It is claimed that the New York State Grange secured introduction into the Senate of that State a resolution making it a misdemeanor to sell a chicken less than 8 years old, a duck less than 12, geese less than 25, cattle less than 20, or eggs less than 3 years old. Jackasses are to be slaughtered when 6 weeks old or before their brains become active enough to secure seats in Congress, we presume. We are not sure that such an old and dignified body as the State Grange could be so playful, but so it is reported, and it is a very effective way to call attention to the folly of all such recourses aiming to interfere with the regular production and sale of veal.

Meantime the chance for profitable production of more beef remains as good as ever and California should do more with it. Complaint comes from the stockmen of Nevada that the cattle ranges of that State are being homesteaded and the cattle are being gradually driven out. This may be true from the range man's point of view. In California, however, there is much more land which has rainfall-grazing and a better chance to grow additional forage by rainfall. Nevada experts are looking to old Mexico for grazing if the country should ever settle down, but California should look to more home-grown beef, both on farm and range. Meantime more meat is coming from Australia and there will be still more to follow, but we cannot see that all sources in sight are likely to give us more than enough, considering the population we have coming. We do not need fake legislation on this subject, but we do need wide awake enterprise.

Symbiosis in Spuds.

Succotash seems to prevail with some of our table vegetables before they meet their culinary fate as well as afterward. The cable has been clicking off a story about a couple of Frenchmen who have found out that potato varieties recently from the seed-ball have vigor and dis-

ease-resistance which may make them productive while potatoes grown for generations from cut tubers may fail. We have no objection to the cable amusing itself with that hoary fact, which could have been read in any Farmers' Almanac half a century ago. But the Frenchmen do seem to have added a new fact, if it be a fact, that potato plants grown from the contents of the seed-ball may go more to tubers if they have a mushroom irritating their rootlets. The full statement is this: "Potato seed planted in the ordinary way fails to produce plants with potato-bearing roots, but the experts found that in conjunction with certain ground mushrooms the potato seed would produce as desired. The mushrooms, by attaching themselves to the young plant, provoke the formation of potatoes." The 1913 crop from sixty plants consisted of potatoes about the size of a walnut though some ran larger. The best of these roots were again planted in 1913, and it is announced that they have produced vigorous fruit-bearing plants entirely free from any of the common potato ailments."

Of course the word "mushroom," in this connection, does not mean edible mushroom or any other aerial form; it simply means "fungus," which may be added artificially or may exist unseen in the soil. Now Burbank and other producers of new varieties of potatoes from the seed balls, who worked very actively at this about half a century ago, did all that these Frenchmen are doing now, except that they did not knowingly provide for the fungus attack upon the roots of their seedlings. The French achievement is not, therefore, such a crushing discovery about the potato as the cable chuckles over; it is simply learning a process by which nature has always worked in the production of potatoes and a conscious imitation of it—which is, of course, a good thing to know, but no such new factor in world feeding as is intimated, because it has always been in operation.

Moral Quality in the Potato.

But here is a demonstration of a quality in potatoes reached in California which we believe will please the world more than the French discovery aforesaid. Plunging a fork in a baked potato, Roderick Peel, a farmer near San Diego, struck in the middle of the vegetable a sapphire ring that his wife dropped in the fields two years ago and searched for in vain. Despite the fact that the field has been gone over with the utmost care, the ring was never found, and the tuber, as it grew, enveloped the ring in its starchy flesh. The potato has been in Peel's bin for several weeks, waiting to return the ring to its owner. And this, we are sure, could not have happened in Europe; not for lack of moral quality in their potatoes, but because it is not considered good form in Europe for ladies to wear jewelry while digging potatoes—a fashion note which we give on the basis of original observation, recently made.

Potatoes from the North.

Rather too much emphasis is being placed on the fact that California is now bringing a good many potatoes down the coast. A dispatch from Seattle says this: "After a year, during which not a potato moved southward on the California liners, shipment of the Washington tubers began with a rush several weeks

ago, and it is estimated that before the rush ends it will handle approximately 2000 tons from Seattle for the California ports." One ought to be able to infer from the fact that no potatoes moved for a year that the present movement is chiefly of seed potatoes, which, with more or less reason, our growers like to get from the north. Of course, some of the potatoes go into consumption and influence the price of California-grown supplies, but we are not starving for potatoes as the announcement seems to indicate. We choose to use northern seed and we can get from earlier plantings already made, new potatoes here before the planting time comes in the farther north, which we will share with those who are now shipping to us.

Dinners by Parcel Post.

Evidently rural communities at the East are trying to escape the blame which is being freely heaped upon them for not fully discharging their proper function in adequately feeding city people. We are reading that Sarah Mitchell, of Durham, Maine, is advertising cooked dinners of chicken, plum pudding, gravy, hard sauce, cranberry sauce, mince pie, pumpkin pie and vegetables, delivered by parcel post. She sends everything, enough for four people, for \$2.21, including postage. All that is necessary to prepare the dinner for the table is warming. It seems to be a practicable plan by which farmers can continue the summer boarder business throughout the year with fault-finding only possible by postal card and with cardinal anguish to the youth of the countryside soothed by absent treatment.

But this boarding branch of the farming business cannot be said to be wholly free from risk. The District Court of Smith county, Kansas, has just decided that a man can recover \$1000 damages from the person who served him a dinner which caused indigestion. This court rendered a verdict of that amount to J. D. Manlone, a farm hand, who ate the dinner, and who thought he should have \$15,000, while Mr. and Mrs. Henry D. Jones, who served the meal, and for whom Manlone worked, asserted the farm hand should get nothing. Mr. and Mrs. Jones have appealed to the Supreme Court, and we shall know in time what a bad dinner is worth to the eater thereof. In California the adjustment would be much easier, for the issue could be referred to the Workmen's Accident Compensation Board, before which tribunal the sufferer could not be held to any contributory negligence in the matter of eating such a dinner; while, on the other hand, the employers' insurance policy would cover any consolation which might be awarded to the sufferer.

How to Avoid Dangerous Dinners.

Fortunately, however, it is not at all necessary to incur such dangers in the serving of dinners, and, of course, California affords the relief. According to a very timely publication by the United States Department of Agriculture, eastern housewives are overlooking a very nutritious and economical diet by not using dried fruits more freely. The amount of dried fruit produced in the United States increased 575 per cent between 1899 and 1909. California produces more than four-fifths of the yearly output. It is estimated that each person consumes on an average five or six pounds of dried fruit a year, which should

be multiplied many times. The value of the product rose from \$4,000,000 to over \$21,000,000 in ten years. The average wholesale price, however, has not advanced with the increased demand. On the contrary, it has dropped from 5½ to about 4½ cents per pound, which simply means that California is making dried fruit more rapidly than the country is learning the beneficence of it, and dried fruits are both cheaper and more wholesome than other foods which are becoming relatively scarcer and higher. The report of the United States department on this subject is very significant in view of the fact that a former officer of the department did all that he could to bring the product into disrepute by wrongly impeaching the wholesomeness of it. If he had not been restrained, no such increase in production as the department now notes could have been attained. Still, the American people do not adequately know our California cured fruits, as is shown by a characterization of California prunes which we have to protest against, on another page of this issue. But the Panama canal will soon be open, and the millions of Europe, who know our dried fruits better than do the millions of our own people, will give assurance that a great product, produced so cheaply under our growing and curing conditions, will be recognized as a world's benefaction.

Queries and Replies.

Querists must submit full names and addresses.

Cover Crops on Summer-Crop Land.

To the Editor: Will the plowing under of a crop of wild oats have a tendency to dry out the ground to be sown to Egyptian corn, Milo maize, etc., about May 1? When should this land, a heavy soil, be plowed for the above planting? Can sweet potatoes be grown in a sandy loam without irrigation where the winter rains have been 12 inches?—M. R., Planada.

If you plow under this month and you get fair rains in March, your summer crop will be advantaged, if the stuff is plowed in well and the land is straight-disked or sub-surface packed after plowing, to close up air spaces below without dragging out the stuff. This will cause this stuff to decay in a retentive soil. The same practice is the best preparation for a summer crop, even if you have not much to plow under. It is a great way to save moisture, but if you are not turning under much you can use a harrow instead of the other tools mentioned. We should want some water for those sweets unless the land is low and gets more than its share of the rainfall by seepage.

Harrowing Young Grain.

To the Editor: Does harrowing grain increase the yield, and how many times should it be harrowed, and what time should it be done?—R. B., Florin.

Harrowing young grain which is trying to grow in a soil crusted by rain and wind does increase the yield of grain by promoting the thrift of the plant and by reducing surface evaporation, thus giving the plant more moisture to grow with. The advantage of harrowing is most notable on heavy soils inclined to bake and on lighter soils inclined to cement on top. It can be done to advantage when the grain is several inches high. There can be no date for doing it, but it should not be

delayed long after crusting begins, and do not wait too long through expectation of rains. We doubt if it is often done more than once, but it could no doubt be repeated to advantage in many cases. We would like to know what readers have done in that line. If it is taken in time, only a slight harrowing is required.

Die-back on Cherries.

To the Editor: Our cherry trees have died back somewhat on the ends. Would you advise us to cut them back now or wait till after the fruit is gathered? The trees are budded now and we don't want to injure our crop of cherries.—B. T., Martinez.

You are always safe in cutting back to sound wood whenever you see die-back, and just as soon as you are sure of it: no matter what time of the year it is. Cutting back now will not hurt fruit wood which is still healthy. The worst thing about die-back is that it usually indicates root trouble and cutting back may not stop it. Your trees probably need either irrigation or drainage, according to the soil they are growing in.

Lemon on Orange.

To the Editor: Can one graft lemon on to orange? If one can when should it be done? Also are there any particular way or ways of doing it or can one follow the rules that apply to other grafting.—NEW SUBSCRIBER, Wrights.

One surely can. Most of our lemon trees are on orange roots—such trees being made by shield budding in the nursery. Top grafting of older trees is frequently done in the orchard with the ordinary cleft graft method, but better waxing is essential, as with other evergreen trees which do not start scions as briskly as deciduous trees. Grafting is also better done later in the spring when the tree shows signs of starting a new growth, which requires a higher heat than deciduous trees.

For Cutworms.

To the Editor: Will liming the soil protect tomato plants and other plants from cutworms. I encountered cutworm troubles last year and have your recipe for poisoned mash. Would appreciate your advice on the matter.—B., Stanislaus.

Lime may help somewhat, but it is not an efficient preventive. We should hunt for the worms in the soil at the base of the plant if you are growing garden tomatoes. In field culture this calls for too much labor usually. It is a good thing to do, however, in connection with hoeing. Then you can set the mash to catch those you do not find.

Indian or Egyptian?

To the Editor: I am contemplating planting field corn of some kind on a ranch at Morgan Hill. The soil is loose and gravelly and rather yellow in color—valley land. Do you think Egyptian or Dent corn would be the better to grow? Would you advise buying selected seed from a seed man? Do you believe in the theory that corn becomes acclimated to certain parts of the state and that it is consequently better to plant corn grown locally?—F. C. P., Palo Alto.

You will be likely to do better on such soil with Egyptian because the sorghums will do better with less moisture than Indian corn. Plant the best selected seed you can get; if it is selected in the locality so much the better; but good selection anywhere is probably better than poor, local run. Of course you cannot plant until after frost danger is over.

Presumptions of a Prune Prophet.

To the Editor: Enclosed please find page from last issue of Country Gentleman. I refer you particularly to article on prunes. This article will doubtless be very interesting to your Santa Clara county prune growers. I respectfully suggest that the editor of the Country Gentleman be sent a sample of the "overgrown and mushy" product of California.—A. W. S., Oakland.

[The Country Gentleman is an elegant exponent of the new science of near-farming, and the article comes about as near to the real facts as that pseudo-science generally does. It is a piece of writing which is suggestive enough, probably, so far as the experience of the writer of it goes, to those who may like to develop a little home fruit-drying under the climatic conditions which prevail in the northeastern States. His characterization and condemnation of what he knows nothing about is reprehensible. It is also quite representative of the phase of near-farming which results from the effort to constitute a journal prepared in one far-away region of the United States a farming guide for the whole country with its vastly varied conditions, and with its greatly diverse experience-teachings under such conditions. Such universal journals spread over such specialized industries as befit localized natural resources and conditions in the different States, may be successful commercial enterprises and may greatly interest near-farmers who like to dream about the general agriculture of the country, but they cannot be journals to work by.

The page which our Oakland correspondent sends us tells how the writer is making prunes in New Jersey on the basis of the German prune which seems to produce well in that district. That part is interesting and may be locally suggestive, but when the writer starts in to pelt the great prune industry of California with his few sacks of New Jersey prunes, the result would be amusing were it not that the large class of near-farming readers to which he attains, and who are for the most part purchasers of products rather than producers of them, may be misled and prejudiced by his misrepresentations. For example, we take one of his opening paragraphs:

"Millions of pounds of prunes, borne by thousands of trees, are grown annually in California and Oregon, dried in the sun and shipped through the length and breadth of the land for the 'stewed prunes' of the breakfast table. But one who has tasted a fresh California-grown prune and one grown in Europe can readily tell the difference. The climatic conditions of the Pacific Coast, with dry, steady, overhead heat and artificial irrigation, produce size and color, but what the prune gains in this respect it loses in the main factor—flavor! California prunes outgrow themselves and turn into a sort of mushy plum, twice the size of the European article, and have about only one thing—the color—to show their origin."

Just here we have to remark that apparently our Oakland correspondent misapprehends the writer, for his suggestion that California growers might like to send a sample to the Eastern editor indicates that he thinks the California-cured prune under direct

indictment.

As we read the paragraph, the writer bases his arraignment upon his misconception of the ripe fresh prune from which the cured product is made (in this State in the open sunshine, in Oregon in evaporators), and does not attribute mushiness to the dried fruit, except by inference.

In the first place, the ripe California prune is not a mushy fruit, as Eastern plum people count mushiness from their own observation of the domestica varieties as grown in their humid climate. We know what that is, for we used to fight the curculio to get a few of them. The composition of the California French prune as it goes from the tree to the sun-tray, is, on the average of many analyses, as follows:

	Per cent.
Water	72.82
Organic matter	26.60
Ash	0.57

Of the organic matter, 18.53% is sugar and 1.82% protein. It thus appears that the ripe prune, as it comes from the tree, has less water than butter and many other food staples. It has also less water than other fruits.

As for the dried California prune, there is no mushiness about that, of course, for it contains, on the average:

	Per cent.
Water	25.67
Sugar	55.83
Protein	2.24
Fiber	1.45
Fat	0.52
Ash	2.39
Refuse	11.09

Evidently, a man who attributes mushiness to such a fruit does not know what he is talking about. Again, as to flavor, unless he estimates flavor on the basis of antiscorbutic acids, the critic is off his base, for a fruit which is over one-quarter sugar from the tree and over half sugar from the drying tray, is endowed with richness and flavors from fruit sugars which no one can successfully impeach. The fact is that the writer jumps at that conclusion from his misapprehension that California prunes are usually irrigated. They are not. They would be better if they were. A good-sized, rich and fragrant fruit comes from adequate soil moisture. Our prunes would be of higher grade and quality if irrigation, as it might be needed, were more generally available. As for "dry, steady, overhead heat," the writer does not know, of course, that most California prunes are grown in the coast valleys where those words, applicable, perhaps, to the more arid and more generally irrigated sections of the State, do not apply at all.

Another gem of luminosity of this writer is this: "The California prunes, picked green and over-ripened in transit, are sold cheap under the collective name of 'blue plums.'"

In this case the writer evidently bases his characterization of California cured prunes upon what he has seen of some of our plums which are shipped fresh to Eastern markets. These are, for the most part, not the plum varieties which our prune product is made of. Some French prunes may go fresh, but not many, and they are not picked for shipping in the condition which they are allowed to attain for curing.

In his exhortation to Eastern peo-

ple to grow German prunes for curing, the writer is within his rights, but he perhaps does not know that thirty or forty years ago we had plenty of German prune trees in California, but abandoned the variety as being of a much inferior type to the

French prune. The California prune industry cast out the German prune during the early years of its development.

Finally, we advise our contemporary not to take his knowledge of California from New Jersey.—EDITOR.]

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California Table Grapes in Sawdust.

[By A. V. STUBENBAUCH in Bulletin 35 of the U. S. Dept. of Agriculture.]

The prices obtained during the season of 1912-13 for California grapes packed in redwood sawdust may be considered as very satisfactory on the whole. Owing to unusual weather conditions during the latter part of the packing season, Emperor grapes were held on the vines exceptionally late, and the fruit packed in crates reached the Eastern markets in unusually fine shape until late in December. The sawdust-packed fruit in drums was compelled to meet competition from the crate stock in a way that will not be experienced in normal seasons. In addition, the sales in previous years of the Emperor grapes packed in cork had a demoralizing effect on the sales of the fruit properly packed in sawdust.

THE FAILURE WITH CORK-DUST.—The cork-packed grapes were sold in the principal Eastern markets before the sawdust-packed lots reached there. Many buyers of the cork-packed stock handled the fruit at a loss and therefore became suspicious of all California grapes packed in drums. Small lots of Emperor grapes packed in redwood sawdust were offered at the auction sales from day to day, however, and as they were found to be in sound condition the demand for them gradually increased, as is shown by the higher prices realized toward the end of the season. Very few complaints were heard from buyers who handled the sawdust-packed fruit. While the failure of the attempt to pack the Emperor grapes in cork caused considerable criticism and financial loss, the experience was valuable in that it emphasizes the importance of using proper care in packing and shipping as well as the necessity of selecting only the best stock for this rather expensive method of marketing.

The commercial demonstrations during 1911-12 and 1912-13, as well as the records of the Bureau investigations during the past seven years, show that the method of packing California table grapes with a filler of redwood sawdust and of holding them in cold storage for the holiday market is destined to form one of the successful practices of the grape industry of the State. Thus far the Emperor is the most acceptable variety for this purpose now being produced in California. A study of the methods of cultivating and training the Spanish varieties with a view to producing them on a commercial scale is well worth the efforts of both the federal authorities and the State station investigators.

FIELD FOR SAWDUST PACKING.—It is not expected that the sawdust-drum pack will replace the crate package for ordinary commercial shipments to any considerable extent. As has been shown, this system of handling is expensive and will therefore prove profitable only for the best grades of fruit, which can be marketed at comparatively high prices. The use of the sawdust-drum pack for commercial shipments to distant markets requiring long periods of transit or for shipments to central markets, there to be broken up and distributed to local points, is not only feasible but offers a means of reaching markets at pres-

ent inaccessible, and renders possible the shipment of varieties possessing fine qualities but unadapted to shipment in crates without a filler.

The establishment of the sawdust-drum pack for California grapes has not been accomplished without opposition. It is a well known fact that the trade always looks with disfavor upon any change in the established system of packing and handling fruit, and the use of the sawdust filler was no exception to this general rule. It required considerable effort on the part of the Bureau investigators and no little courage on the part of the pioneer commercial shippers to inaugurate this plan. Fortunately, the first commercial demonstrations were sufficiently successful to warrant a continuation of the efforts to market the fruit in this way on a scale large enough to establish the sawdust pack as a commercial practice. Great credit is due the growers and shippers who made possible the first commercial demonstrations, for without their co-operation the work would have lacked that most important final test necessary to make it of direct value to the table-grape industry of California.

COST OF THE DRUM-SAWDUST PACK.—The cost of packing the grapes in drums with a filler of redwood sawdust, as determined by one of the leading shippers during the season of 1912-13, was as follows:

Drum	\$0.33
Sawdust	0.20
Packing and hauling.....	0.20
Loading	0.03

Total f.o.b. cost.....	\$0.76
Freight	0.57
Refrigeration in transit.....	0.15

Total cost at Eastern market...\$1.48

The freight charge is based on a rate of \$1.15 per hundred pounds to New York, figuring the drums at 50 pounds gross weight, although in some places they were listed at a lower average weight. The cost of refrigeration is based on a charge of \$90 per carload of 600 drums. Storage charges in New York and Jersey City during 1912-13 were 10 cents per drum per month, but it is reported that this rate will be increased next season. The commission charges at New York were 7% of the selling price. Therefore, when grapes were held for two months in storage the cost laid down at the auction sale, as estimated above, was \$1.68 per drum.

On a basis of 35 lbs. of grapes per drum, an auction price of \$3 yields a net price of 3.17c. per pound, or \$63.40 per ton. A price of \$2.80 per drum yields 2.63c. per pound, or \$52.60 per ton.

It is safe to assume that the cost of the sawdust and of the drums will be reduced when the demand increases sufficiently to warrant the manufacture of the packages in large quantities and the preparation of the sawdust on a large scale.

SUMMARY.—The following principles summarize the recommendations of the Bureau of Plant Industry with regard to the storage of California table grapes:

(1) Only fruit of the best quality, which can be marketed at comparatively high prices, should be handled in this way.

(2) Those varieties of grapes which have open bunches are most suitable for packing in redwood sawdust.

(3) The drum barrel has been found to be the most satisfactory package for grapes packed in redwood sawdust.

(4) The redwood sawdust should be pure and unmixed with other woods, and the particles should be of the size approved by tests. Enough filling material should be used to prevent settling.

(5) The fruit should be cooled overnight in the vineyard or pre-cooled before the packages are loaded into the cars.

(6) The fruit should be very carefully handled, the berries should be free from blemishes, and all imperfec-

tions should be removed.

(7) There should be a uniform quantity and quality of fruit in each package. The fruit should be culled before it is conveyed to the packers and should be graded for color and size of bunches.

(8) It should be shipped under refrigeration and placed in cold storage at 32°F. immediately upon reaching its destination.

(9) When these conditions have been observed, Emperor grapes may be held in cold storage until about January 10, the Malaga variety until December 15, and the Muscat until November 15. When Almeria grapes can be grown successfully for commercial purposes, they may be held in cold storage until about April 1.



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THOS. S. DUANE, Prop.

MARTINEZ, CAL.

California's Leadership in Alfalfa.

(Continued from Page 225.)

the Gulf of Mexico to the Canadas, it is pertinent to point out not only California's leadership in the utilization of the plant, but the effect which California's demonstration has exerted everywhere.

About sixty years ago, gold-seekers were coming to California by all available routes, and food supplies were ordered from all the markets of the world. Either through the travel for gold or the trade for food, there came to California knowledge of a strong-growing, perennial clover in Chile which was new to American eyes, and though California was not then generally recognized as wonderfully endowed for agriculture, there were a few pioneers who saw the truth and made haste to take advantage of it. What seemed to them little less than a calamity was that the rich fields which grew grass so tall in the rainy season that riders on horseback and grizzly bears could not see each other until actually encountered, should be bare of verdure during the long summer and autumn heat which the grand valley oaks and sycamores showed to be so good for foliage. If there could be found anywhere a plant which would not bleach and die in the early summer, when plants should be doing their best growing, surely the California plains could out-farm any country where grass started in April and browned in September. Was this wonderful clover in Chile such a plant? Perhaps: we will try it.

What was that patch of green in the Sacramento valley just below Marysville in 1853? Surely, some one had been pouring water on it from a well or from the river. No? Well, it surely is a wonder: worth riding miles to see. And they rode miles to see a little green island in the midst of an ocean of midsummer yellows and browns: verdure without irrigation: a plant which could pump its own water from the permanent supply when it occurs twelve or fifteen feet below the surface of a soil freely open to root penetration. The plant for which the pioneers pined had been quickly found! It is possible to transform the sere summer aspect of the plains into park-like expanses of verdure! Though the plant on suitable soils will do this by its own powers, its service could be multiplied by irrigation and extended also to soils on which it could not help itself by moisture. The crowning need of the whole arid region, west of the Rocky Mountains, had been supplied through the optimism and enterprise of a few California pioneers!

The Mormons of Salt Lake were pioneers in irrigation on the Pacific Slope, but they had no alfalfa until they saw the California demonstration and profited by it. Then alfalfa followed irrigation water in Colorado, Idaho, Montana, Wyoming, Nevada, Arizona, and New Mexico—not in the order named, perhaps, but all of them following California and Utah. Then came the movement eastward from the Rocky Mountains, Kansas and Nebraska first, and then the whole sweep of the Mississippi valley; then to the Atlantic slope from New England to Georgia. Everywhere the impulse came from what people east of the Sierra Nevada had actually seen or heard about as done in California.

In many cases, no doubt, eastward-moving Californians personally pioneered the alfalfa movement in distant States. I remember that the demonstrations in Nebraska and Virginia were first made by ex-Californians.

It is apparently a striking event in plant movement—this progress of alfalfa eastward across the United States. The course of economic plants beginning in prehistoric times has been westward—not only from the traditional birthplace of the race in Asia Minor as commonly recorded, but from China westward into India and thence westward in the movement of the Aryan races. And yet, stemming this tide, alfalfa moved eastward from California. A few other things have done this in the past, and many others will do so in the future as there is realized in California the center of a new and unique American civilization, of which the potentiality is now discernible; a Pacific-American type of thought and action, of which the foundations were laid when the whole world came to California seeking gold in 1849.

And while all this is true, it is, of course, a fact that the plant known in Europe as "lucerne" reached the Atlantic coast many times no doubt prior to the introduction of Chile "alfalfa" at San Francisco. The names apply to the same plant, but "lucerne" made no appreciable stand on the Atlantic coast nor did it move westward therefrom. It rested under condemnation for inferiority to red, white, and other clovers. In 1871 this writer was secretary of the Central New York Farmers' Club, of which Mr. Campbell, owner of the New York Mills herd of Short-horns, was president, and at a meeting of the club some one asked Mr. Campbell what he thought of the plant "lucerne" which had recently been received from Europe. "I am going to plow it up," said Mr. Campbell, "it is not as good as red clover." Mr. Campbell could grow a Short-horn cow which sold at auction for \$40,600, but he could not see value in alfalfa. This was evidently the conclusion of others, for the plant as introduced at Atlantic parts never established itself. It was not until the same plant proceeded eastward, clad in the panoply of its Western victories, that it could command intelligent trial and fair judgment. Now it is engrossing attention everywhere, even in the States where the last generation condemned it as undesirable.

Alfalfa made its first enduring stand on American soil in California, and the California demonstration of its value lies in the foundation of the present popularity of the plant because of its usefulness in stock-growing and feeding enterprises in all parts of the United States. In the middle of the last century California gave the world more gold than it previously possessed, but it made a greater contribution to American development in the gift of alfalfa because alfalfa will grow each year in volume, value and potentiality throughout the continent.

But though California experience has thus aroused the present interest in alfalfa on this continent, and though great value will be derived from the plant here and there, its

public service will, in the nature of things, be greater in California than elsewhere. California cannot distribute her deep free soils nor her amplitude of heat nor her freedom from frost which insure eight months in the year of alfalfa growing and hay making. To reach the fullest benefits of the plant, the California climate is indispensable.

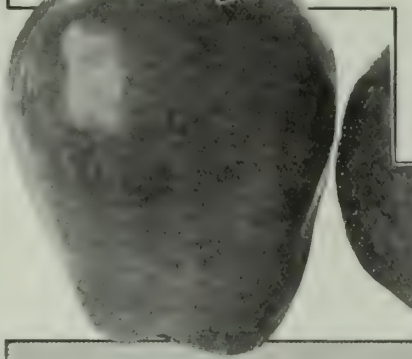
ALFALFA OR GRAPES?

To the Editor: I would like your advice about planting alfalfa on adobe soil. I have 10 acres I wish to plant sometime in March; it is all level and checked now, but will have to be re-plowed. This is only fairly well drained and water is standing some now from the heavy rains. How should I plant it—deep or shallow—and should the ground be settled after plowing with water to insure a firm seed bed? Do you think that if I can get a good stand this spring, it would live through the coming win-

ter rains, or would it likely drown out? I have a good lateral to flood-gates, and think I can handle the irrigation water all right. I wish to plant it in March so as to catch spring rains to bring it up. If you do not advise me to plant alfalfa in this ground, how would Thompson's seedless grapes do?—SUBSCRIBER, Live Oak.

[Re-plow as soon as the ground is in good shape, and harrow thoroughly. Cover the seed very little. If the surface is a little cloddy, the alfalfa will come around all right if moisture is right, but there ought to be a good degree of pulverization. We would not water-settle after plowing. There is danger of making the ground too cold and wet. If you can get the seed up by rainfall, irrigation will behave better after the stand protects the land. Alfalfa will stand overflows when the plant is dormant, and so will grape vines, but neither is likely to be long-lived if the ground stays too wet during the summer.—EDITOR.]

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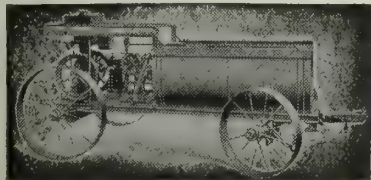
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What Readers Think of Rural Credits.

WHY SPECIAL PRIVILEGE TO NATIONAL BANKS?

To the Editor: It is gratifying to see the issue of "cheaper money for the farmer" coming to the front in our dailies and rural periodicals, for it is a sign that people are beginning to realize that if the goose that lays the golden egg is starved there is apt to be a shortage of eggs among those who have made it their business to handle this article. It seems strange, however, that it should not have occurred either to the government or the commission, the latter of which is trying to suggest a feasible rural credit system, that our national banks are getting "real money" from the government for $\frac{1}{2}$ to 1% and at the same time receive 4% interest, paid in advance, on their bonds. Is there not something radically wrong in Denmark when non-producers are supplied with real and cheap money, while the producers are handicapped on every turn for the lack of this article? Is not the property of the farmers as good a security as the bonds of the national bankers? And if so, why such privileges to one class of our citizens and none to those who create the greatest part of our country's wealth? Can any reasonable argument be given as to why the farmers should require a different system of obtaining money than the national banks? If those who are versed in finance will explain this riddle it may hush up much grumbling and stimulate us unsophisticated farmers to greater self-activity. "God helps those who help themselves."—A. ISAAK, Lincoln.

[You have hit it; when the agricultural interest puts up as well organized institutions as the financial interests now does, there will be no special privilege to the latter. Laws now coming forward in Congress are to facilitate such organization. But if the movement gets anywhere the farmers must take it up more energetically than they now show signs of doing.—EDITOR.]

BELIEVES IN HIGHER SELLING RATHER THAN LOWER BORROWING.

To the Editor: In getting cheap money for farmers you say:

First: "From the accumulations of farmers themselves in their organizations."

Now the facts are that in this country, when the farmer wants to borrow money he wants it cheap but as soon as he has money to spare he wants at least 7% for it. If he cannot get that much for it he will use it to buy more land and increase his operations. When a condition comes about that the farmer cannot make 7% on his operations he will have little money to loan at any per cent.

Second: "From depositors and investors of all kinds who esteem first of all security." This applies certainly to the money that is "up above" in the hands of men who understand finance, and should apply to the small investor also, but the small investor receiving less than 7% would receive little to aid in the struggle against the high cost of living so that they will not be benefited much.

When national banks offer 4% on term deposits and "baby bonds" bearing 5% can be bought by the small in-

vestor no great amount of money will "well up" from below for the farmer at a smaller rate.

A difference of 2 or 3% in the interest rate paid on the average mortgage amounts to little compared with the amount that can be gained by more efficient marketing methods. If after eliminating the waste in distribution of farm products it still is evident that the farmer cannot produce at a profit, then he must have cheaper labor and cheaper capital.

Today cheaper labor and cheaper capital might easily result in greater production and a lessened selling price. How much would be gained thereby for the farmer, he is the man we are considering?

I believe that if the national administration would give more attention to the Bureau of Markets and less to Rural Credits that the farmer would be more prosperous and the consumer would be more benefited.—H. W. WRIGHTSON, Fowler.

[All right; let every one hit it his own way. But how far will a selling organization get without money at low interest? You are trying to start your automobile with an empty gasoline tank. Are you going to boost it along with your shoulders till you get to a drug store where you can buy it at medicinal prices? Financing is the foundation of all selling enterprises. It makes a lot of difference whether you are getting money to capitalize it, from first hands or from second hands. Keep on thinking about it.]

We know that farmers like to loan money at high rates and they have just as much right to do so as anyone else and some of them are mighty good at getting what is coming to them too. We are not objecting to that but it is very easy for a farmer to lose money by making such loans. Much better returns could often be had by investing the money in better outfit for farming, etc. Again suppose he does not get so much interest on the money he puts into a selling and buying institution, what of that? Say he gets 4% interest on such an investment instead of 7% by shaving notes outside and loses 3%. How does that look beside 20% to 50% he may make in the price of the crops he sells and 10% to 20% he may save on the prices of the supplies he has to purchase. Do a little thinking about that, too.—EDITOR.]

DEPTH IN PLANTING.

"Do not plant fruit trees deeper than they were in the nursery," is the advice of H. E. Butler, manager of the Penryn Fruit Co. This applies especially to peaches, cherries, etc., which never grow well from cuttings, but also in a great degree to all fruits. The bark, accustomed to light, dryness, and air, when covered is very likely to rot or at least deteriorate so as to dwarf or kill the tree.—R. E. H., Penryn.

[This is just right for the soils and situations in which Mr. Butler has been doing excellent work, but when it comes to planting on sandy loams in the valley it is often well to drop the trees three or four inches—but be sure you have that kind of soil before you do it.—EDITOR.]

"A Stitch in Time Saves Nine"

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

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W. A. T. STRATTON,
Petaluma, Cal.

Planning Ornamental Planting.

To the Editor: I have been occupied this afternoon in looking over books, catalogues of bulbs, etc., preparatory to planning a number of beds, borders and clumps, but none which I have seems to offer me any practical help. If I possessed the data required in a compact form, I could very quickly plan out a decorative scheme for this place. The questions are in part as follows:

1. What are the principal flowers procurable from California dealers, used alone in borders growing from bulbs or seeds? Depth of planting, distance apart, height of growth, range of colors?

2. What are double combinations of low and high flowers for borders?

3. What are bed flowers, single varieties for solid beds; mixed 2 varieties simultaneous or succeeding; mixed 3 varieties, simultaneous or succeeding?

4. Rows of bed flowers (such as ice plants, etc.), depth, height, colors, first, second, third rows and center, arranged as to depth, height, and color?

5. Suggestions as to interspace planting for continuous seasons blooming of non-conflicting varieties?

6. Group, cluster, or clump varieties?

Of all the foregoing, time of planting, spacing, quantities of seed necessary, time of blooming, heights, etc., tabulated wherever possible.

Is any publication for sale with such information contained? Or could you refer this letter to anyone who can enlighten me in this regard? It seems that a handbook of this sort would be invaluable to people who have not time to devote largely to such work, and I would gladly pay a high price for a volume of this kind were it on the market.

To illustrate why I write you this letter today—I received a shipment of bulbs of ixijs, jonquils, montbretias, ranunculids, etc., and in trying to arrange a proper scheme for planting these to the best advantage, I developed a very fair brainstorm.

Apologizing for this appropriation of your valued time, I am

Minturn. WM. CURTIS CLARK.

ANSWER BY C. C. MORSE & CO.

To the Editor: We enclose a reply to Wm. Curtis Clark's letter, in regard to planting out his flower beds. This comprises only the seed part, as many other varieties come from plants only, in which we have not dealt at all. We may say that it is impossible to give information, such as Mr. Clark wants, in any such condensed form as a letter. He requests information which would fill a book, and we regret that we know of no book which gives answers to all the questions which he asks.

It is impossible to describe to anybody how a flower bed would look if they have no conception of what the plants themselves are like, and it is impossible to make out a list for anybody which would be satisfactory. We could make out such a list, but whether it would please the party we do not know, and we do not believe that he would know.

We trust, however, that the following information will help your correspondent to solve his difficulties with regard to planting, and will be of benefit.

(1) The principal border plants, easily procurable, are as follows: Annual—Ageratum, Dwarf; Alyssum; Can-

dytuft, Dwarf; Celosia, Dwarf; Centaurea, Dusty Miller; Dianthus; Feverfew, or Pyrethrum; Gypsophila, Muralis; Lobelia Compacta; Mignonette; Nemophila; Pansy; Portulaca and Sweet Peas, Cupids. Perennial—Alyssum Saxatile; Armeria Maritima; Border Pinks; Daisy, English; Forget-Me-Not; Poppy, Iceland; Primula, Vulgaris and P. Polyanthus; and Viola. The above are all from seed. The following bulbs also make excellent borders, although most bulbs grow so tall that they make a better bedding effect, rather than a border. The following, however, are dwarf: Freesias, Crocus, Oxalis, and Triteleya or Spring Star Flower.

The seed of all of these is either sown in flats and later transplanted to the border, or is sown $\frac{1}{4}$ in. deep; all except the finest seeds. Lobelia, Iceland Poppy, Portulaca, and seeds so fine, should be pressed into the top of the soil after it has been well prepared, and lightly watered twice a day. If moss is sifted over the seed, it will help to prevent drying out.

For range of colors, the best plan is to consult one of the seed catalogues. From the list given above, the following have foliage which is pretty in itself: Centaurea, silvery foliage; Feverfew, golden foliage; Armeria Maritima, dark foliage; Border Pinks, silver foliage.

There are also border plants which are propagated from cuttings, and the Santolina and Ice Plant are two of the best.

(2) For plants which are taller than the above and which may still be used for border plants, we suggest planting the following: Ageratum; Calendula; Candytuft; Celosia; Dianthus; Godetia; Hunnemannia; Hyacinths; Iris; Lupins; Marigold; Mignonette; Nasturtium, Dwarf; Pansy; Petunia; Scabiosa, Dwarf; Snapdragon, Dwarf; Stocks, Ten Weeks; Begonia, Vernon; Cineraria; Shasta Daisy; Penstemon; Salvia, and Sweet William. These are also used for bedding plants with excellent effects.

(3) Bedding plants comprise the above list; also the following, which are better suited for beds than for borders: Anemones; Daffodils; Tulips; Hyacinths; Early Gladiolus. These are all bulbous plants. Also, Auricula, Achillea, Columbine, Gaillardia, Penstemon, Mimulus, Verbena, Asters, Celosia, Chrysanthemum Annual; Forget-Me-Not; Phlox; Poppy; Pyrethrum; Schizanthus; Scabiosa, Tall; Stocks, Winter; Snapdragon, Tall.

(4) We would suggest one of the border plants for the first row, one of the higher border plants for the second row, one of the bedding plants for the third, and for the center we should use one of the tall growing plants, such as Cosmos, Larkspur, Rudbecka, Salpiglossis, Scabiosa, tall, Canterbury Bells, Chrysanthemum, Dahlias, Gladiolus, Golden Rod, Poppy, Perennial Phlox, Coreopsis. The above can all be had from seed, and comprise the principal flowers used for these purposes.

[Undoubtedly the information will be helpful and interesting to many, and other readers may be inclined to help also. We would like to have special plants and combinations of plants for beds and borders named and described by all flower-loving readers. But it is, of course, asking almost too much to expect to indicate and char-

acterize plants so broadly and at the same time so specifically that one who does not know plants can use them effectively and satisfactorily in garden planning. Garden planning is

work for an experienced amateur or for an expert professional plantsman who knows the growing conditions of the locality for which he is prescribing.—EDITOR.]

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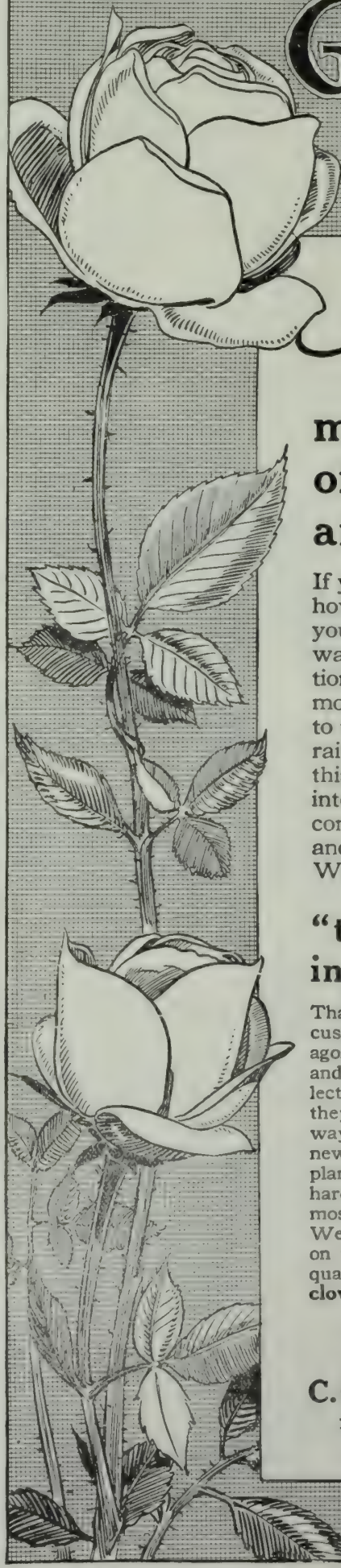
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Farmers' Insurance for Workmen's Compensation.

To the Editor: Please inform me where to write for information concerning insurance of liability laws for common farm hands and milkers; also the amount to be paid for the different work.—SUBSCRIBER, Los Banos.

ANSWER BY MR. PILLSBURY.

To the Editor: In answer to your correspondent I beg to state:—

1. That all inquiries concerning compensation insurance should be addressed to State Compensation Insurance Fund, 525 Market street, San Francisco, California.

2. The rate for compensation insurance applicable to farm and ranch operations, covering all employments incident thereto, including domestic service in the farmer's home, is \$1.50 on each \$100 paid out for labor during the year. When the insurance is applied for the payroll will have to be estimated in the light of past experience, but when the year ends final settlement must be made on the basis of what the payroll actually was. If the farmer over-estimated his payroll the difference will be returned to him, if he under-estimated it he must pay the difference into the state fund. He must keep an accurate account of his wage expenditures for, if he undertakes to deceive, and is caught at it, he will pay ten times the amount he undertook to defraud the fund out of.

3. The above rate does not cover wood cutting if the cutting is done for the market, but if done for the use of the farm and the household it does. The wood cutting rate, where it is carried on as a business, is \$4.16 on each \$100, and the amount so expended must be separately recorded and accounted for at the final settlement.

4. Sometimes the line drawn between farm labor and that which is not farm labor is, and has to be, more arbitrary than logical. For instance, if a farmer has a few stumps to blast out or a corner of his place to be cleared his regular farm policy will cover him, but if he has any considerable tract to be cleared and made ready to become a farm the rate will be \$2.80. If considerable blasting has to be done a full explanation of the operations in contemplation should be forwarded to The Fund before the work begins in order that the risk may be provided for understandingly and the insurance policy be made to cover the risk. It may be possible to have one man do all the blasting and handling of dynamite while all the other workers remain at a safe distance, in which case the rate will be \$25 on the \$100 of payroll for that man which, while it looks high, and probably is, need not figure out to a very large sum inasmuch as, if the work is made ready, the blasting for a large tract can be done in a very few days.

5. If a farmer desires to erect buildings, dig wells, install irrigation systems, all such employees are under the protection of the compensation act because they are not farm labor. The rate for well boring is \$2.62, but for well digging in the old-fashioned way it is \$12.25. For constructing buildings, the rate is \$3.32, for millwrights erecting or repairing machinery it is \$3.50. The rate for constructing irrigation canals (no rock work, blasting or steam shovel work) is \$3.60, and

for laying irrigation pipes for distributing water it is \$3.76. All ordinary farm work in connection with irrigation systems, extensions of distributing ditches, when the work is done exclusively by farm laborers, in connection with their other farm duties, is covered by the regular farm policy at the \$1.50 rate.

The farmer does not have to sit up nights to worry over whether or not his policy covers any particular thing that he wishes to do, or if he would be liable if he stepped outside to have something unusual and pressing done, for the reason that his policy is very liberal in its terms and contains an automatic extension clause providing that the policy covers any other work in which the insured may engage, except aviation and work in connection with sewers and tunnels, sub-ways, etc., but, as stated above, the insured farmer must keep an accurate account of his wage expenditures, what he makes them for and, when the year is closed, he will make final settlement on the basis of that record at the manual rates for all work he has done outside of farm labor and at the rate of \$1.50 on the \$100 for all farm and domestic labor. It makes no difference whether all the work is done in two or three months of the year or throughout the year, and he may insure for any particular job if he wishes to and for that alone.

Under his policy the entire compensation obligations of the employer are taken care of by the State Fund, including medical, surgical and hospital charges on account of injured employees, and he may separately state his own wage value, and the wage values of working members of his family, add to his other payroll and have all hands insured against risks of his industry.

There is one thing that the farmer needs to look out for if he hires work done for him on his place through the letting of a contract and that is to see to it that his contractor is insured before he starts in otherwise the farmer may find himself held as surety for compensations payable to the employees of the contractor in the event that the contractor is not good for the compensation awarded to his injured employees. I will discuss this phase of the situation at a future time. This communication already reaching. I fear, a forbidden length. If you make sure that your contractor is insured you are safe so far as injuries to his men are concerned, and so is he, but otherwise not. When owners insist that contractors carry compensation insurance they will all carry it, all be on an equality in bidding for the work, and the workmen will all be protected in the event of injury. That is what the provision was put into the law for, but that is another story.

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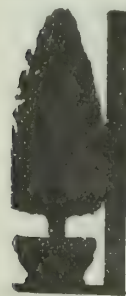
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What California Counties are Doing for Good Roads.

A \$5,500,000 guarantee of faith in the value of the State highway system has been furnished to the State by counties which have subscribed for highway bonds in excess of that amount in order to assure prosecution of the highway work in advance of the opening of the 1915 expositions. The State highway bonds bear 4% interest, and under the law must be sold at par and accrued interest. No sales have been made in the general market since October, 1912.

When the lack of a market for low-rate bonds promised to continue, the Highway Commission appealed to the supervisors of counties to take advantage of an act passed by the last legislature permitting investment of county funds and re-selling of State bonds. In return for this co-operation, the Highway Commission agreed to expend the sums received within the limits of the counties financing the bond sales.

About thirty counties have responded, permitting a total of \$5,719,500 of highway bond sales, with about \$1,000,000 additional informally pledged. Most of the counties have merely taken care of the shrinkage between the par value and the market demand. As the State maintains the State highway, the saving to the county in maintenance, in practically every instance, is as great in the first year as the depreciation loss which the county stands to make the bonds salable. Several counties with considerable money on hand are keeping the bonds, thus bringing an interest return of 4% in place of the 2% which the funds have been drawing from the banks. The depreciation has averaged less than 5 per cent.

The counties in which sales of or pledges to purchase the State highway bonds have been definitely made are as follows, according to a list given out by the State Highway Commission:

Los Angeles, \$695,000; San Diego, \$557,000; Alameda, \$500,000; Solano, \$390,000; Contra Costa, \$300,000; Colusa, \$290,000; San Luis Obispo, \$250,000; Santa Clara, \$228,000; Glenn, \$218,500; Kern, \$200,000; San Mateo, \$200,000; Orange, \$200,000; Imperial, \$200,000; Fresno, \$150,000; Marin, \$150,000; Sacramento, \$150,000; Santa Barbara, \$141,000; Tuolumne, \$125,000; Eldorado, \$150,000; San Bernardino, \$105,000; Riverside, \$100,000; Humboldt, \$100,000; Stanislaus, \$75,000; Santa Cruz, \$75,000; Siskiyou, \$50,000; Monterey, \$45,000; Mendocino, \$45,000; San Benito, \$25,000; Shasta, \$5,000.

This co-operation the Highway Commission believes will make possible the completion in time for the 1915 expositions the greater part of the coast line between San Diego and San Francisco and north to Eureka, the west Sacramento valley highway from Red Bluff to Benicia, and a considerable part of the route through the San Joaquin and Sacramento valleys between Bakersfield and Red Bluff via Fresno, Sacramento, and Marysville.

CROWN GALL OR ROOT KNOT.

To the Editor: For some time now I have been bothered with a black knot appearing on my apricot trees. I chisel them off, but they appear in other places. How can this be controlled? Also kindly state through

the PRESS what is the main cause of this disease.—H. K., Orange.

[The cause has recently been demonstrated to be bacterial; as to favoring conditions, there has been no demonstration. Nothing better is known than chiseling off and painting the wound with Bordeaux mixture. If you can keep them away from the root-crown and forking of large roots, the tree may carry many on smaller roots and still be profitable.—EDITOR.]

WHEN WATER MAY RUN DOWN HILL.

To the Editor: Has the man below a legal right to build temporary dams on his own land, to prevent waste irrigation water flowing in storm water channels during the irrigation season when there is no storm water?

Can the man above be legally restrained from making use of storm-water channels to get rid of his waste irrigation water where such use will lead to damage of the land below at a time when there is no storm water?

Can the man above legally make use of land below, against the protest of the owner, for the purpose of getting rid of his waste irrigation water by paying resulting damages to the land by the water?—P. E. M., Woodlake.

ANSWER BY PROF. A. E. CHANDLER, OF
SYMME, MEANS & CHANDLER.

It is well settled in California that the owner of upper land has an easement over lower and adjacent land for the discharge of surface or rain water as it is accustomed to naturally flow. The upper land owner, however, has no right to change the natural mode of discharge to the injury of the lower land owner.

The upper land owner can, therefore, be restrained from discharging waste irrigation water (that is, not natural waters) into storm-water channels, if such discharge damages the lower land owner.

As the lower land owner has this right of injunction, he may also throw temporary dams across storm-water channels on his own land to prevent said waste irrigation waters from doing injury to his land.

San Francisco.

IT GETS THE GOAT.

A dispatch from Ithaca, N. Y. says that experiments made on goats in the college of medicine at Cornell University may eventually lead to an increase in the supply and thereby reduce the price of milk. According to R. P. Hill, a graduate student at Cornell, a goat has been made to give milk of twice the quantity and five times richer in cream through the injection of a recently discovered serum under the skin or into a large blood vessel of the animal.

Whether the same process will give equally gratifying results when applied to cows has yet to be determined, but the investigators are hopeful.

The serum is a preparation made from the pituitary gland of live stock. It has been found that injections have to be made frequently in order to keep up the increasing production. It is but a short time after the injection that the increase is noted.

[Well supposing that is all true, what is the effect on the goat?]

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Fruit Notes.

[Written for PACIFIC RURAL PRESS by
R. E. HODGES.]

PRUNING AFTER PLANTING.—In planting fruit trees, if they are much branched, cut them back to about three branches so located as to form a properly shaped tree. If not branched, cut the "whip" back to 20 in., leaving a number of buds for prospective branches. This pruning is to reduce the evaporating surface until the roots become established. The roots, too, need pruning. Broken roots would send out fine feeder roots at the injured point, whereas you want them to send out fewer and larger roots to reach farther into the soil before feeders are formed. Such roots will develop from the last bud if the broken part is smoothly cut off, according to H. Reinecke who has worked fruit over 40 years in Placer county.

IRON AS FRUIT COLORING.—Fruit growers in a certain part of California claim that the uncommon amount of iron in their soil gives their fruit a richer deeper color.

Prof. Lipman of Berkeley says "there is no evidence supported by experiment that indicates in any way the direct relation of iron to the proper coloring of fruit though we know that iron in very small quantities is essential to the growth of plants."

SETTING THE SCION.—Walnuts and olives are among the hardest fruits to graft or bud. An important point in the grafting is to set the scion so that its wood and bark fibers cross those of the stock at an angle. This arrangement intercepts the sap more effectively and runs it over to the intersection of the cambium layers. In budding walnuts, it is quite necessary to wax the buds to prevent their drying out. With olives, only a tight raffia tie is necessary. [This is not the usual reason assigned for tilting, viz to cross the cambium layers to be sure of contact.—EDITOR.]

STOCK FOR PEARS.—French pear stock only is used for Bartlett pears by a large nursery company of the Newcastle fruit district, because the Japanese and American stocks have proved unreliable in making vital union.

TRANSPLANTING OLIVES.

To the Editor: I have eleven three-year-old Mission olive trees which I

would like to transplant along a gulch carrying rain water in winter time and irrigation waste water during the summer. After I dug three holes, the water, soaking through the ground, filled them up in about 15 minutes. Kindly let me know: shall I bale out the water and plant the trees with plenty of earth tamped in around them, or had I better let the trees remain in their present place for another year and find out in summer time how far back from the running water the moisture will soak through the ground, which consists of sand, loam and gravel?—A. B., Palermo.

[You should not transplant olives until everything begins to warm up and the buds look like starting a new wood growth. This may be a couple of months from now. By that time you can see if there is still too much water, etc. A short stand of water in such soil will not hurt an olive, but if there is always as much water there, it is no place for an olive.—EDITOR.]

REASONING ON HORTICULTURAL AFFINITIES.

To the Editor: Replying to a recent inquiry in the PRESS regarding the adaptability of the apricot to almond stock, I would say that, judging from facts gathered from standard authorities, the idea that the apricot may be so adapted does not reason well. The peach has more of the characteristics of the almond than the apricot has, and will thrive better on the almond than on plum stock.

Apricots, having more of the peculiarities of the plum, do well on this root. The fact that there is a hybrid of the peach and almond and a plumcot, each a commercial success, substantiates this view.

At the Kansas Experiment Station, peach trees budded on myrobalan stock were compared with those on their own root. The result at the end of six years was that of the 44 former all were either dead or in very bad condition, while 24 out of 47 of the latter were sound and vigorous.

G. C. AMES.

San Francisco, February 10.

[It is interesting enough to reason about horticultural affinity, but the facts demonstrated by experience are the only sure guide to practice. California experience has amply demon-

strated that the apricot is not satisfactory on the almond, that the prune is satisfactory on the plum, and we do not need to go to Kansas to know that the peach is great on the peach and dangerous on the plum.—EDITOR.]

A GRAPE SHIPPER WHO BELIEVES IN GOOD GOODS.

To the Editor: I have been a resident of this State two years and four months and have read every issue of your valuable paper for 27 months. If all ranchers really knew the worth of your paper they would not do without it, especially so the fruit and alfalfa growers.

I am in the grape-growing business. It does me good to see such able men write for you upon different subjects. In last week's issue your condemnation of the unripe grape shipping is just and proper. Go after them with your best sarcastic talent. In my own case I am sure I want and need the best prices, yet under no condition would I place an article on the market which I would not want to buy for myself. I have letters now from some of the city's old and reliable firms stating we shipped the best grapes and the best pack they ever handled. This is simply done by perseverance and continuous study. Laws are made for all, but the violator is the one who pays the penalty. So it will be with the green fruit shipper sooner or later: they will get him, and none too soon, I'll assure you.—S. T., Modesto.

YELLOW SCALE ON ORANGE.

To the Editor: Enclosed find several leaves from my orange and lemon trees which are affected with some kind of scale. The scale is also on the fruit, but the recent rains washed most of it off. It was considerably thicker on the leaves and caused them to turn yellow in spots. Can you tell me through your columns what the pest is and how to kill it?—SUBSCRIBER, West Butte.

[This is the yellow scale of citrus trees (*Chrysomphalus citrinus*). It infests chiefly the leaves and fruits. It is a grievous pest and the only effective treatment is fumigation. You are not losing the pest by the rains. The old dead scales wash off but they have left an ample progeny which will grow into greater prominence and effect on the foliage later.—EDITOR.]

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Playing the Big Live Stock Game Successfully.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

Playing the farm game in a big way has made California famous all over the world, but after one has been a continuous resident for a few years, the bigness of our agricultural developments becomes more commonplace and are often lost sight of. As a matter of fact, in traveling over the State, so many big undertakings are seen that it becomes difficult to judge which are of the greatest interest.

While on a trip to see more of this big game stuff, we recently met C. N. Hawkins, of Hollister, San Benito county, who is manager and principal owner of the Pacheco Cattle Company, and when he remarked that his company owned an 18,000-acre ranch which would in ten years time be completely re-stocked with purebred Shorthorns and that a fifth of the required number of breeding cows were already on the place, we lost no time in accepting a generous invitation to spend a night at the ranch, for we thought that this game was surely big enough and new enough to be of interest to RURAL PRESS readers.

Accordingly we started out by auto, late in the afternoon, for the ranch house, about nine miles from town, and after riding about seven miles through a former grain section, which is now being transformed into orchards and alfalfa ranches by the aid of electricity and pumps, we were told that the level valley land to the left was the western boundary of the ranch and that the high point, several miles east was Pacheco point, where the eastern boundary line runs.

The road soon turned and we were ascending the first rolling hills, east of the valley, but only for a short ways, for we were soon out in a green carpeted river bottom, where the Las Viboras creek, meaning Rattlesnake creek, comes out of the hills in a big stream during the winter months, but usually subsides about the first of July.

Before arriving at the ranch house we saw several fine alfalfa fields on some higher bench lands, and were told that the hundred acres now planted will be added to as soon as a larger dam can be constructed, farther up the creek, which will make a reservoir with a capacity of 1000 acre feet and which will be completed this season. Here also was seen a great deal of good land that will later be farmed to beets, pumpkins and corn, the latter very likely to be used for ensilage purposes.

Arriving at the house, we found a modern residence with well kept yards, an extravagance the former owners indulged in, but still well worth having.

THE FOUNDATION.—At the barn we found that a few of the cattle had been housed for the night, this being done in order to more easily handle and prepare them for the show season this year. Among them was the young herd bull, True Dale, a grandson of the great Avon Dale and sired by the bull Double Dale. Those familiar with Shorthorn breeding will acknowledge that the owners have good reason to expect great things from this sire, as the show-ring record of his relations are hard to equal, and as an in-

dividual he holds out great promise himself.

There were also several head of young stock in the barn sired by Double Dale, some of which were born after shipment, and they all carry the same general type appearance.

We were beginning to wonder whether, after all, we were not visiting a breeding establishment, where the stock had to be handled with kid gloves, instead of a range proposition, but all fears in that direction were soon dispelled by going out to see the rest of the stock, for we found them out on the hills feeding in the same manner that the range stock is handled, the only difference being that they were driven into a corral every day, that the breeding may be done and recorded, as the bulls are not turned out.

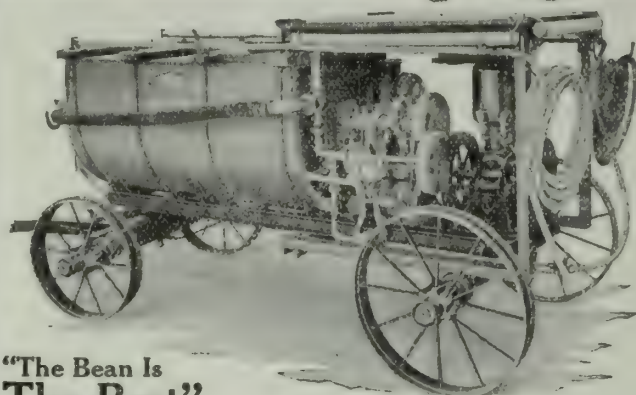
THE FEED.—So far as we could see all of the 115 head of registered cows looked to be in fine condition, and it was not hard to see the reason, for, next to the stock itself, the feed was most noticeable. Alfalfa, burr clover and wild oats were several inches high, all over the hills, and we were told that the same condition existed all over the ranch, although, of course, this is an exceptionally favorable year. Later on, when these grasses have gone to seed, the summer grasses come on, which provide excellent pasture for the rest of the year; in fact, they grow so rank that the more sloping hills are run over with mowing machines and the grass raked into windrows, where it is eagerly sought by the cattle after the more tender grasses are gone. Only the range stuff is handled in this way, as tame hay is provided for the registered herd, close to home, during the winter months, when there is little or no feed on the hills.

The success of this method of feeding was demonstrated last year, when 1500 cattle were carried through the dry season with feed to spare. The average cattleman will say that if the ranch will carry 1500 head in dry years, it should carry a good many more in good years, but Mr. Hawkins has a different way of reasoning, for when we spoke of the matter, he said: "I never consider that I have wasted any grass that has not been fed, because it goes back into the soil to insure good crops next year and the years following. On the other hand, I believe that grass, all fed, is wasted, for when such practices are followed, the land is robbed of practically everything and yearly becomes less productive." Such reasoning has enabled the company to turn off more dollars worth of beef from 1500 cattle than the former owners could with from 2000 to 2500 head, so it seems like good logic.

This conservation of feed, however, has only been a part of the battle for more income, for the range cows have been bred to purebred bulls for the past five years, and consequently are of better quality.

HOW IT HAPPENED.—When we asked our host how he wandered so far from tradition as to plan on running purebreds entirely on the place, he stated that it had been his idea, at first, to only keep a sufficiently large herd to supply bulls for his range cows, but he soon found that by wait-

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ing a few years he could, with very little extra expense, keep enough registered cows to supply the range with both cows and bulls, and in this way make the whole proposition purebred. This will require about 500 breeding cows, of which from 100 to 200 will be registered and kept near headquarters, in order to register the progeny if so desired. The choicest bull calves from this herd will be turned on the range, for breeding purposes, or sold, and the remainder will be altered and turned onto the range as steers.

"By raising all of my breeding stock under identically the same conditions as I have on the range I find that they have the conformation and constitution to care for themselves on the range the same as native cattle and respond to good feed much quicker and when some of my friends fear that I am raising too fine a grade of cattle to rough it on wild feed, I invariably reply that I am not raising cattle to rough it, but am raising them to feed."

If Mr. Hawkins were only an enthusiastic beginner at the cattle game, he might be accused of being over-ambitious, but the fact that he has raised cattle for over 20 years, in the same conservative manner that others pursue, obliterates any such charge.

Aside from its remarkable natural advantages for this new game, the ranch has had considerable to do in the making of past cattle history in the county, as it is a part of the Ansaymas grant, that belonged, with other large grants, to an Indian named Pacheco, whose name is to be perpetuated by the present owners.

As we were leaving, the next morning, we speculated, in our own mind, as to what old Pacheco would think of this big undertaking, on the same place that he killed cattle for tallow and hides.

Anyway, it is a new, big game worth considering by all cattle raisers, and it would not be surprising if after all this is but the beginning of a new era in beef production in California.

SURVEY OF UNCLE SAM'S FARM.

Only 27% of the tillable land of the United States is actually under cultivation, according to estimates of the Department of Agriculture, based upon reports of 35,000 correspondents. These reports were obtained in order to gain information as to the tillable area of the United States the amount of land that cannot be used for crops that have to be plowed, but available for pasture or fruits, and the total number of acres that never can be used for agricultural purposes. From the returns, which were generally very consistent, preliminary estimates have been made for each state and for the United States. Further investigation in the far western states may modify somewhat the present estimate for those states.

The entire United States, excluding foreign possessions, contains about 1,900,000,000 acres. Of this area about 60% or 1,140,000,000 acres is estimated to be tillable, that is, capable of being brought under cultivation by means of the plow. This includes land already under such cultivation and that which in the future may be brought under cultivation by clearing, drainage, irrigation, etc.

361,000,000 acres or 19% are estimated to be nontillable but valuable for pasture or fruits. Only 21% or

399,000,000 acres, was estimated to be of no use for agriculture present or future.

According to the census of 1909, the land area in crops where acreage was given was 311,000,000 acres. This is about 16% of the total land area or about 27% of the estimated potential tillable area of the United States, excluding foreign possessions.

In other words, for every 100 acres that are now tilled, about 375 acres may be tilled when the country is fully developed. In the development of the agriculture of the country the land which was most easily brought into a state of cultivation, as the great Mississippi Valley, was the first to be brought into such use. Extension of tilled area will be at greater expense for clearing, drainage, irrigation, etc. The increased production of the future will be the result of increased yields per acre as well as extension of area.

SOME OTHER WAYS WITH STRAIGHT-UP BRUSH.

To the Editor: In your paper of February 7, on the "Clearing Up-Standing Brush" you ask "Who knows a better way?"

I am always glad to help anyone out, if I can, and I will endeavor to explain two more ways which I think will be more rapid and satisfactory.

By the first method I snaked out evergreen hedge trees which were from 1 to 3 inches in diameter: Use single and double block or shives with 1-in. diameter rope. On the block you pull from (the double block) use two 10-ft. chains with ring in one end and hook on other. Secure this to a good anchor bush or to 3 or 5 of them, enough to hold. Fasten them right down close to the ground so there is no leverage on them. As soon as you have pulled all you can reach in a circle around the anchor trees, take one anchor chain off, or start with one anchor chain, then hook on other, take in big circle on single block end. I use one to four chains; take two half hitches as high as possible, make first chain taut; 2nd chain 2 ft. slack; 3rd chain 3 ft. slack, and so on—so your horses are pulling one bush at a time. If they pull hard the chains are very easy removed as they do not tie in hard knots when horses are pulling on them as ropes do.

A second method is to use two wagon wheels, long pole 4x6x12 pine with large strong iron hook on one end. Bolt the hook on, allow the end with the hook on to project over the axle 18 in. Bolt the pole down to axle. This gives you great leverage. Roll right along on the short end over the axle. Use a good $\frac{5}{8}$ chain. Take double half, hitch around bush, raise the pole into air, take a short tie on the bush, start the horse and out comes the bush. This is what is sometimes called a vine-puller as it is largely used in clearing off old grape vines.—T., Vacaville.

[Very good.—EDITOR.]

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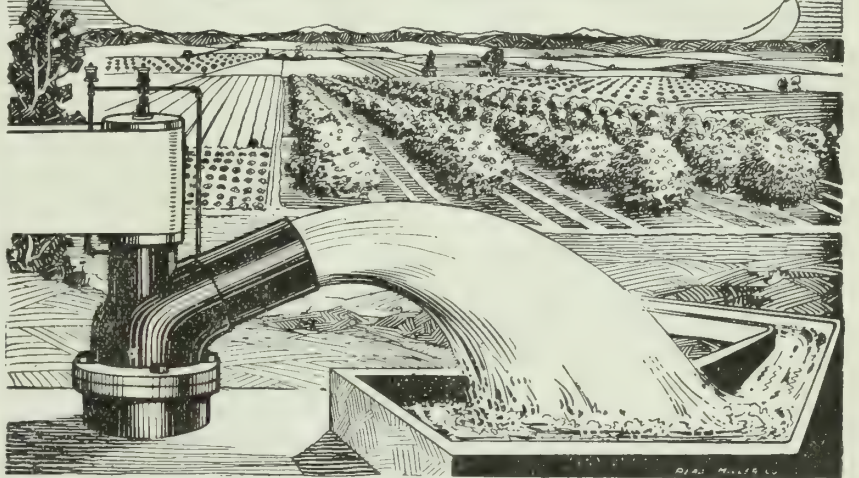
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AGRICULTURAL REVIEW.

Fruit Planting.

Pear tree planting in Nevada county will cost some hundreds of thousands of dollars for nursery stock, clearing the land, and the labor in planting. Thompson's Seedless grape plantings near Kerman, Fresno county, will probably aggregate over one thousand acres this spring. A shipment was recently made to Tehachapi of 7000 apple trees, 4500 Bartlett pears, 1000 strawberry plants, and 40,000 currant bushes. About 40,000 pear and apple trees will be planted there this spring. One nursery agent has sold 33,000 fruit trees in San Luis Obispo county. Horticultural Inspector L. H. Day, of San Benito county, inspected 70,000 fruit trees received since December, for planting this spring, three-fourths of them apricots. Peaches will be planted between figs on a 280-acre ranch in Madera county. Plum planting in Placer county has exceeded all predictions, and growers are scouring the country for nursery trees, which cannot be obtained.

Profitable Raisin Marketing.

Raisin growers numbering 5900 and representing 95% of the acreage have signed contracts to deliver their crops to the California Associated Raisin Company. A year ago in December this company started business with \$800,000 of capital subscribed; but not paid in. They bought \$134,000 worth of packing houses and handled 26,000 tons out of the 35,000 tons remaining from the 1912 crop. The 1913 crop of 58,000 tons will have been handled through this association, for which the growers have been paid more than \$5,000,000. On the two crops, the association's system of marketing as the demand came, instead of shipping most of the crop in October and November, as usual, the net gain to the growers has been \$1,100,000 more, according to the manager, James Madison, than it would have been under the old lack of system. Another extra million is expected on the portion yet unsold, and in addition to this 9% has been earned on the investment after paying all expenses. The manager urges an increase of capital stock to the full amount authorized in order to pay cash for the crop and hold it until the demand exceeds the supply on the market.

Irrigators to Meet.

A meeting of exceptional interest to those interested in irrigation development will be held in Bakersfield, Monday, February 23, beginning at 10 o'clock, when the San Joaquin Valley Water Problem Association and the Irrigation Districts Association of California will meet in joint session. The meeting is public and all interested in the work of either organization are invited.

The civic bodies of Bakersfield will entertain the delegates and visitors at luncheon, February 23, and will give them an automobile ride to study irrigation methods the afternoon of the 22nd. Those who expect to take the ride are requested to notify Rollin Laird, chairman of the Bakersfield committee, that they will reach that city by noon of the 22nd. Round-trip tickets for one and one-third fares may be purchased on either railroad on account of Washington's birthday. The recently organized Inland

Waterways Association of California will be represented by a delegation from the bay cities and the interior. Irrigation by means of pumping plants, with facts about the cost of various methods of pumping, will be discussed by Clifford B. Greeley, city engineer of Bakersfield. A report on the financing of irrigation districts will be made by a committee appointed several months ago, and the convention will determine whether to attempt to secure the submission of a constitutional amendment by the initiative to allow the state to issue bonds to provide a fund for the purchase of irrigation district bonds. The relation of the national and state governments to irrigation development and flood control will be considered in connection with the discussion of the Newlands river regulation bill, the work of the State Reclamation Board, and the recent suggestion by Secretary of the Interior Lane that a conference of authorities of Western States be held to deliberate upon irrigation problems. The movement in Fresno, Tulare and Kings counties to organize a great conservation district to store the surplus waters of Kings river will be the subject of an interesting report.

Two Grape Crops per Year.

A second crop of grapes has ripened on a vine in Orange county. The first crop was cut in November.

Country Development Organization.

Lemon Grove ranches have organized to co-operate with a county agricultural adviser, especially in developing San Diego county's raw fruit and vegetable land. A county organization was perfected February 20. Six thousand crates of vegetables were shipped into this county in March, 1913.

No Danger from Imported Eggs.

Efforts to show that Chinese eggs recently imported were injurious to health seem to have been unnecessary. The Chinese exporter intends to sell his little brown eggs by the pound in Europe at better profits.

Some Chicken Plant.

The Brandt Bros., of Healdsburg, will have a chick hatchery with a capacity of 60,000 chicks every three weeks, when their new concrete incubator house is completed. At present the capacity is 3600 at a hatching. The eggs are usually of single comb White Leghorns and are imported from New Jersey.

The first annual meet of the Tulare Co-operative Poultry Association was held at Tulare last week. The reports read show a membership exceeding one hundred, and the total volume of business of the last eight months was \$31,360.

The Visalia Co-operative Poultry Association was partly organized last week to provide marketing facilities and to buy supplies at wholesale for its members.

Lake County Colonization.

Colonization of Lake and Mendocino counties on five to ten-acre tracts is about to be promoted by northern California capitalists. Vegetables for canneries will be leading crops, though the colonists will be encouraged to

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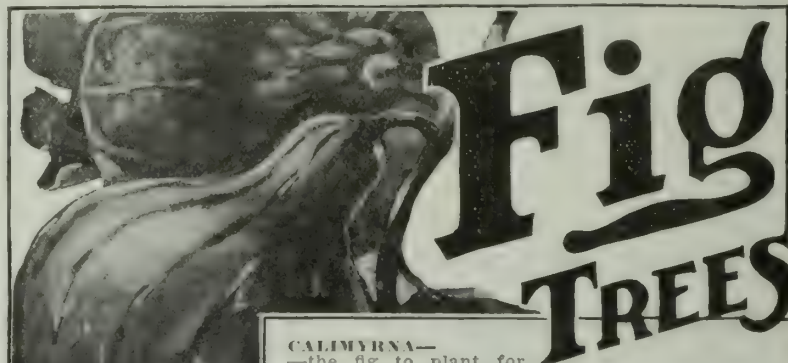
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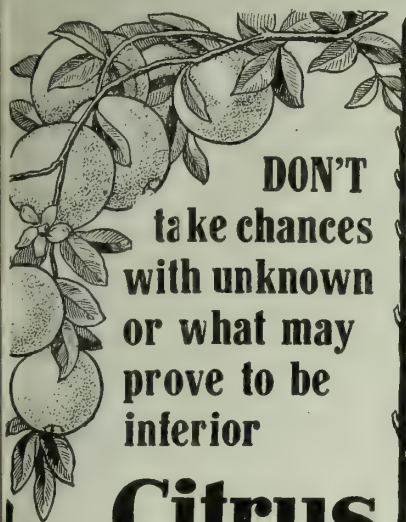
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use the parcels post to some extent to reach the consumer direct with fresh vegetables. Certain sections of Lake county are already yielding unusual profits raising string beans for the cannery.

Unified Poultry Marketing.

A minimum price of 21 cents for No. 1 eggs is guaranteed for a year to the Poultry Producers Association of Sonoma county by a produce company of San Francisco. Eggs will be packed at Petaluma and distributed to all the Pacific coast markets to avoid an oversupply at any one of them.

Icing Rates May be Reduced.

The State Railroad Commission has appealed to the Interstate Commerce Commission for a reduction of \$15 per car in the icing charges on deciduous fruits shipped to the East. They also asked a reduction of 2000 pounds from the minimum carload weight of 26,000 pounds. The question will probably be settled before fruit shipping begins and may save the fruit growers a quarter million dollars annually.

Irrigation Prospects.

Surveys are being made for the diversion of 60,000 inches of water near Redding. It is expected that this will supply 250,000 acres on the west side of the Sacramento as far south as Stony creek in Glenn county. Power will be developed for use in Redding and Red Bluff.

Yolo county claims to have the biggest pumping plant in the world nearing completion. It is a drainage project costing \$250,000. Fifty miles of levees, 75 miles of drainage ditches, and 100 miles of road have been built.

The Klamath Water Users' Association is negotiating with the Government for the control of the project.

Land owners south and west of Oroville are working on a petition to the supervisors for the organization of their section into an irrigation district to draw water from Feather river or its tributaries.

Plans for flood-water conservation of Kings river in Fresno, Tulare, and Kings counties to irrigate a million acres, and costing \$6,000,000 for mountain reservoirs, will be soon presented to a mass-meeting of water consumers at Fresno.

All but the north end of Lake county will be formed into an irrigation district supplied from Clear lake and tributary streams, if the petition already completed meets favorable action with the supervisors in March.

The rivers and harbors committee of the National House of Representatives favors the definite plans presented for improvement of the San Joaquin and Sacramento rivers, especially with a view to flood control and navigation. This, of course, will mean much to irrigation.

Weather Encourages Grain.

Wet weather in Yolo county is responsible for the planting of thousands of acres of new land to grain. The acreage of grain has been steadily decreasing in the past decade; but is about 15% larger than at any other time within five years. Every prospect indicates a bumper crop.

Citrus Fairs, North and South.

The Fourth Annual Orange Show opened at San Bernardino February 18. Two million oranges and lemons on exhibit represent a \$400,000,000 in-

vestment in California citrus fruits. Shasta county's exhibit will surprise many visitors. Special excursions will be taken by the visitors to the citrus groves. On the 19th the Cloverdale Citrus Fair in Sonoma county opened, to continue through the 23rd.

Vegetable Prospect Good.

The asparagus crop is about two weeks earlier than in 1913. First shipments have been made from San Joaquin county. The acreage is about 1,000 acres less than last year and the prospective demand, especially for canned asparagus, seems strong.

Visalia beet sugar prospects are of the best.

It is reported that \$2,000,000 worth of navy beans were shipped east from the delta region last season.

Warm Weather Reduces Aphis.

Fears of damage by aphis in Imperial valley barley fields are allayed by the warm weather which has been so favorable to the natural parasites of the aphis that no damage is apparent.

RECEIVED TOO LATE FOR CLASSIFICATION.

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FOR SALE—Ten good dairy cows bred to registered Holstein bull. W. N. Totman, Emmaton, Sacramento Co., Cal.

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TRADE MARK

A Run-Down Soil and Hogs.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

When land is denied all kinds of humus for 15 years and still produces abundant crops all of that time, it is bound to be in poor mechanical condition.

At least that is the opinion of W. J. Hanna, who purchased 120 acres of land near Gilroy some three years ago. This land had been leased by seed growers for a great many years, and as clean cultivation was necessary and the straw was burned after the seeds had been threshed, it gave the soil very little chance to hold its own. Being in a good prune locality, the new owner decided upon planting that fruit, but found that there was about 80 acres which was not good tree land. It was decided to plant that portion to grain, as it was subject to overflow, and the other 40 was to be planted to prunes.

Accordingly, 22 acres was planted the first year, which left a small acreage uncultivated. Horse beans were planted in this space, and between the trees, as they would add fertility to the soil and also produce a profitable crop.

Now the main thing was to put the soil in better condition, and it was planned to put all the vegetation back into the soil. The straw from the barley and horse beans would help, but why not feed the whole thing and put it all back into the soil. This idea seemed so good that a bunch of hogs was bought, to harvest the crop, and they did it in such a profitable manner that it was decided to buy some breeding sows and raise the pigs on the ranch. Hogs could be fattened on barley hay and horse beans very easily, because they did all of their own feeding and also the threshing and started an income while the orchard was growing, but when it was decided to raise the pigs, some other feed had to be grown. Skim-milk would aid, but forage was also needed, so a patch of alfalfa was sown, and that brought the dairy.

The proposition now, after three years, is this: 70 acres is planted to grain and horse beans, for fattening the hogs; 20 acres is planted to alfalfa to furnish forage for the hogs and hay for the cows; 22 acres is planted to trees, the ground between the rows growing a crop of vetches, early in the spring, and a crop of Indian corn later in the season. The corn is put through a silo and helps to make more manure and skim-milk for the hogs, also butter-fat. There is eight acres more of the place that is good prune land, and this will be planted the coming season, as the soil is in much better condition now than before, and while the young orchard is getting ready to add to the income the dairy and hog end is being built up, for it has been found that those features are result getters, not only for the soil, but for the annual income. This year there will be 100 head of hogs fattened and the dairy will be enlarged to 20 cows. The experience shows that by pursuing the proper tactics, even badly run down soils can be brought back to life.

BOUGHTEN HOGS ON BOUGHTEN FEEDS.

To the Editor: A few weeks ago a subscriber asked whether "any money

could be made on hogs where one has to buy all they consume." As I have made some experiments to solve this question, I will give my experience.

In November, 1912, I bought two pigs eight weeks old, fed them for four months and sold them in March, 1913. I bought, at the same time, two pigs, sold them in June, bought two more, sold them in November, and bought three which I will sell in March or April.

Now to the financial side of the matter. For these ten pigs I paid \$31.50. I have bought and fed to them 2240 pounds of shorts, 60 pounds of bran and 50 pounds of corn, costing in all \$36. Besides this they have received unthreshed peas and oats worth \$3.80, and an average of about 10 pounds of skim-milk a day, representing a value of \$8, if the skim-milk is worth 20 cents per 100 lbs. This makes an expenditure of \$79.30, of which \$67.50 was in cash. The six hogs I sold brought me \$79.55, the empty grain sacks \$1, and the three hogs that are left are now worth about \$20.

I keep the hogs in an enclosure of about two-thirds of an acre. It is uncultivated land, full of large stumps, and nothing grows between them except ferns and wild grass.

This experiment seems to prove that it is possible, by purchasing small pigs and raising them till they weigh between 125 and 150 pounds, to clear a little over \$2 on each one in three or four months time, even though a man has to buy all they consume.

ERNEST SKARSTEDT.

East Sound, Wash.

CLIPPING COW'S UDDER NO BENEFIT.

In nearly every city milk ordinance credit is given for clipping a cow's udder, or perhaps say, removed for not clipping it. We have long had a suspicion that the city directors of country dairying knew more of theory than fact and jumped at unjustifiable conclusions, which they gripped like grim death, and it seems from a bulletin recently issued by the New York Experiment Station that clipping the udder of a dairy cow is one of their wrong practices and does about as much harm as good in producing clean milk. These experiments indicate that clipping the udder has very little effect on the bacterial content, tending to increase rather than diminish the number. The tests were made by taking samples of milk before and after clipping under conditions as nearly the same as possible with the single exception of clipping. While the difference in the bacterial content of the two samples was not enough to base final conclusions on, it was sufficient to indicate that if proper sanitary methods are observed in handling the cows and the milk, clipping is not essential to the production of the highest grade of milk.

There were two experiments in clipping conducted at the New York Station, one about two years ago, and one quite recently. The results were the same in both cases—a slight increase in the bacterial content after clipping.

There is no doubt that a great deal of germ-bearing material is removed by clipping off the long hair, especially when the cow is not properly kept and

well cleaned before milking; but on the other hand, the germs that are not removed fall more readily in the process of milking after the protective covering has been removed. Small particles of skin are jarred loose in milking, and drop into the pail more freely after the hair has been taken off.

It is probable that clipping is an advantage only when careless and unsanitary methods of dairying are practiced, and either useless or positively harmful when proper cleanliness is observed. As a matter of fact it may be very little good even then. In the meantime, whether clipped or

unclipped, the cow should be kept generally clean, and thoroughly cleaned before milking.

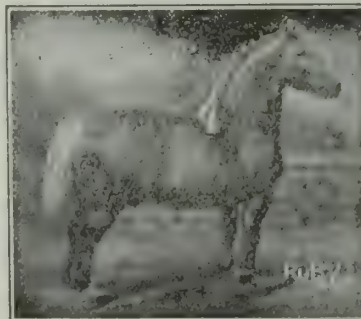
According to F. M. Stone, of Hollister there is a shortage of at least 50% in the number of cattle in San Benito county, at the present time. This has been caused by the dry season last year when large numbers of cattle were shipped out on account of lack of feed. A good many Arizona cattle have been coming in but as the grass is in exceptionally fine shape it is thought that the ranges will be understocked unless the stockmen are able to get hold of southern grown stuff.

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HENRY WHEATLEY,
NAPA, CAL.

Build a Silo.

[Written for the PACIFIC RURAL PRESS
by W. D. GUTHRIE.]

Silos are coming into use in California more and more every year. Hardly a week passes but what we hear of several persons who are planning to erect one this coming spring. Some large dairymen and cattlemen are building several. They find that corn ensilage makes the cheapest as well as one of the best feeds to balance alfalfa hay, in producing milk, beef and mutton.

Having had a great deal of experience with silos and silage, the writer wishes to urge everyone who has over fifteen cows or is feeding beef cattle, who has not now a silo or has not made arrangements to put one up this year, to do so at once. Take a day off and go and visit some dairyman, or feeder who has one, and ask him what he thinks of ensilage. Watch his cows and see what they do when the silage is placed before them. Notice how eager they are, how they enjoy it. Notice also their soft, oily hair and skin. Now sit down and figure out how much it costs you to produce a pound of butter-fat, or a pound of mutton or beef, and then compare it with that of your friend who has the silo. This is the real test. No man wants to go to the expense of putting up a silo unless by its help he can cut down his feed bill, or make his cows produce more milk or keep in better condition, and his cattle and sheep put on more pounds of fat.

Ensilage can be made out of practically every kind of forage crop—Indian corn, kaffir corn, sorghum, cow peas, alfalfa, oats, barley, foxtail, beet tops, and some have even siloed sugar beets. Indian corn, kaffir corn, and sorghum are the most commonly used as silage crops. They contain more carbohydrates, with the exception of sugar beets, than any other crop mentioned. Of these three, Indian corn is considered most profitable, as it produces a larger amount of forage per acre than either of the other two, but still contains about the same per cent of carbohydrates, so much sought after to balance up the protein in the alfalfa hay. From the writer's experience in feeding, we could not see but what the cows liked one just as well as the other.

The first crop of alfalfa often has a great deal of foxtail in it. This can be cut before the beards harden and siloed, and you will be surprised how well the stock will do on it. Often late rains come just about the time the alfalfa is ready to cut the first time. Put it in the silo and you have it saved; besides the second crop is not retarded by the delay in harvesting.

In the coast country, where the nights are too cool for corn to grow well, barley and oats are most generally used for ensilage. In fact, practically any crop that grows a large tonnage of forage per acre can be profitably siloed.

The silo is the same as an insurance policy to the farmer in time of drouth. This last year the dairymen in the coast section south of San Francisco sold thousands of cows at a price very much less than they will have to pay now to replace them, simply because the pastures dried up early, and the cows fed on dry hay would not produce enough butter-fat

to pay expenses. Had these dairymen well filled silos to fall back on they would have been able to have carried their cows over the dry spell without loss. Now these same men are scouring the country for cows to re-stock their ranches. "As Joseph stored corn in Egypt in time of the seven plentiful years for the seven bad years," so must those who live in the unirrigated sections of California save up feed in the good years to carry them over the bad ones. Build a reserve silo and fill it full. Silage will keep indefinitely in a properly made silo. Then when the dry year comes you are prepared. The man that makes the most out of life is the man that is forehanded.

The size of silo to build depends on the amount of stock you keep and how long you expect to feed. The average length of time that most people feed ensilage is five months, feeding 30 pounds daily per head. Some men have found it more profitable to feed 40 pounds, a great deal depending on the size of the cow. Large Holsteins would naturally eat more than Jerseys. From this you can easily figure the number of tons of ensilage you need.

After having decided that you need a silo, the question comes up, which kind is the best? This depends on how much money you wish to invest. The first cost of the wood silo is considerably less than of any other kind. However, they have to be kept painted, which as years go by is worth taking into consideration. With a stave silo the hoops have to be kept tight or else it will get out of shape or fall down. It can, however, be taken down and moved, which is often a very great convenience, especially to the renter whose landlord is too hard-fisted and short-sighted to put one up. A reinforced concrete silo costs more to build, but once it is up you are at no further expense. There are several different kinds of silo forms manufactured for building reinforced concrete silos. With one of these forms anyone who has had a little experience in mixing and tamping concrete can build a silo. It is a very good plan for a number of farmers to go in together and buy a complete outfit, or they may be rented from parties who make that their business.

There is another type of silo which may be seen in California; that is a cement plastered silo. Studding of 2x4 is erected to the desired height, 12 inches apart. To these are nailed steel lath, both inside and out. The inside is plastered with a rich cement plaster, finished smooth, while the outside is given the stucco finish. This makes a very substantial and durable silo and can be built for about one-third less than one of reinforced concrete.

Some have erected cement block silos, while others a vitrified tile silo, and are perfectly satisfied with the way the ensilage kept. The writer has had experience with only the first three mentioned. The main thing is to decide upon the kind of silo that fits your pocketbook best, then go ahead and put it up. The silage will be the same in one as the other.

The bottom of the silo should be made water-tight so as to retain all the juice; also the silo should have continuous doors, from top to bottom, so as to make the removing of ensilage easy. Do not build your silo

over 20 feet in diameter, as you will not be able to throw the ensilage more than that distance conveniently. If you want greater capacity, add to the height, or else build two smaller ones. Place the silo as close to where you want to feed the ensilage as possible. It is a good plan to have the chute come down at one end of the feed alley, as it then serves as a ventilating shaft for the barn as well. Ensilage will not taint milk if fed in a well ventilated barn. Once you have begun feeding ensilage, you will wonder how you ever got along without it so long. So those of you who have not now a silo, prepare to put one up this spring.

CUTTING FOR THE SILO.

To the Editor: After reading the many valuable comments on silos and silage in your paper, I am convinced of their merit. In this locality there

are no custom cutters, and the initial cost of such an equipment is often prohibitive to the small dairyman. Would not the feeding value be as great if green alfalfa or grain was thoroughly tramped in a silo without being chopped? It would simplify the matter materially in isolated locations.—J. R. W., Lindsay.

[We will not say that the stuff cannot be tightly enough packed to make good silage without cuttings, but we are safe in saying that it will not be. Even with cutting, it is hard to silo green grain, because the hollow stems enclose too much air. It might be easier to succeed with alfalfa that way than grain. Does any reader succeed without cutting into the silo?—Ed.]

"Adulterated eggs" frozen and shipped after becoming bad, were recently ordered destroyed by the U. S. District Court in New York.

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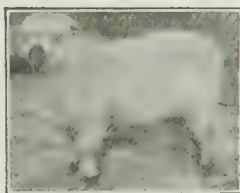


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With the Live Stock Men.

S. S. Moore, of San Francisco, has started a herd of registered Holsteins, on his ranch near Santa Cruz. He has already several head of females on the ranch and these will be added to in the near future.

W. J. Hanna, of Gilroy, is starting with pure-bred Poland Chinas and hopes to get into the business on a larger scale the coming summer. He purchased his foundation stock in Iowa.

The stock feeding experiments which have been in progress at the Miller & Lux ranch, under the supervision of the University of California, have been concluded. There were 100 head in the experiment and it is thought that much good will come from this and similar work. There are still about 1000 head of cattle on the ranch which will be marketed during the coming month.

The indicated total shortage of meat animals since the census of 1910 is nearly 9 beef cattle, 7 sheep and over 3 hogs for each 100 of the total estimated population of the United States in January, 1914, according to the estimates of the Department of Agriculture. This means that it would take 18,259,000 more meat cattle, sheep and swine than the estimates show at present in this country, to give the present population the same meat supply that the census of 1910 showed to exist.

T. J. English who has a large alfalfa ranch near Chino, was in San Francisco this week looking for about 100 head of dairy cows to place on his ranch.

J. E. Lewis of Laton has gone into the raising of pure-bred hogs.

Martin Griffin and Reynolds Bros. have purchased 27,327 acres of the famous Peachtree ranch from the Lux Co., in the southeastern part of Monterey county. The new owners are stockmen and will produce all the beef the land will stand for.

The Fallon, Nevada, Standard reports that George Kurtle of Modesto,

has leased the Davis place east of Fallon and will conduct it as a dairy ranch. Also that L. L. Wheeler has just received 30 Jersey cows from near Modesto and will install the first dairy in the Churchill section.

At the annual meeting of the Nevada State Cattle Owners Association held at Reno, last week, Wm. H. Moffat was elected president. It was decided to affiliate with the American Live Stock Association. Sheepmen were excluded from membership.

Sheepmen of Nevada and southeastern Idaho have already sold about 35% of the 1914 wool clip, at prices averaging from 11½ to 13c. a pound.

The Pacific Land & Cattle Co. has a large force of men at work across the line south of Imperial, cleaning 10,000 acres and seeding it to barley and alfalfa. This company now has 1000 head of cattle fattening for the market.

FILBERTS HERE AND THERE.

To the Editor: I am glad Mr. Etter still has faith in the filbert as a crop for California, although I must confess my own confidence in it had long since been dispelled.

During my recent trip to Europe, I spent some months in the principal filbert producing sections of England, and found that in one county, Kent, the annual output of these nuts averaged 10,000 tons.

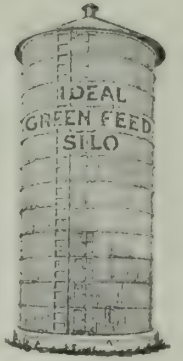
As with us, the catkins are often in bloom long before there is a sign of the appearing of the pistillate blossom, and I asked the growers how it could get pollenized under these circumstances. In answer, my attention was called to the unopened fruit bud, which was found to be covered with a glutinous exudation—the explanation being that the pollen, which is very light, and carried a long distance by the wind, would be caught on these sticky buds, and would fertilize the pistil when it appeared.

The filbert is also slow in coming into bearing, and it may be that we have not exercised sufficient patience. The method of cultivation is as follows: Layers are planted in nursery row for two or three years, and then transplanted a second time to the orchard. They are pruned as a low, spreading bush, with an open centre, something in the shape of an inverted umbrella, and it is sometimes advisable to peg the branches down to start this form. In a few years, when the bush is well formed, the pruning consists mainly in cutting out all the strong wood shoots in the summer, leaving only the spurs or small twigs which produce the first buds, and these are kept well shortened in.

The location was usually a gradually sloping hill-side, overlooking the main valley, and the soil a rich loam of 2 to 4 ft. in depth, under laid with rock, in the crevices between which roots would penetrate freely. In the driest weather, fruit and nut trees suffered less in this soil than in the low-lying lands.

The filbert is often used as an intermediate crop between apples or plums, or planted alone about 12 ft. or 15 ft. apart. The bushes live to a great age, some measuring 20 ft. across, and about 6 ft. high. I saw

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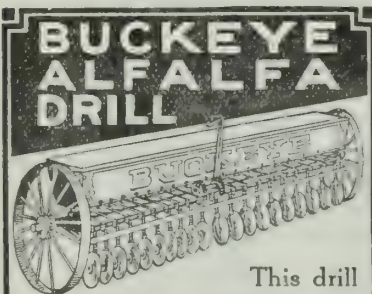
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one "Kentish Cob" tree over 100 years like the average date of the first old, which the year before last bore bloom, of full bloom, and of general 48 lb. of nuts.

I join with Mr. Etter in the hope can get some idea of the comparison that we shall yet produce filberts blooming season for the varieties profitably in California.

Morganhill.

LEONARD COATES.

BLOOMING OF APPLES.

To the Editor: Will you kindly locality where observation is made, give us information regarding the but the sequence or coincidence of blooming period, or season, of Spitz-bloom will widely prevail. Therefore, enburg, Delicious, Rome Beauty, Gano, statements of the order in which they Winter Banana, Stayman Winesap, bloom in any place is important.—Arkansas Black apples? We would EDITOR.]

Raising Spring Lambs.

The most profitable branch of the sheep industry for Western Oregon farmers (and probably for parts of California) is raising spring lambs. Among the favorable conditions enumerated by Professor E. L. Potter, head of the Animal Husbandry department, Oregon Agricultural College, are the following: Suitable climatic conditions; may be conducted on small capital; requires no special skill; fits approved rotation systems; builds up soil; and is in no immediate danger of being overdone.

"Practically all the hay and grain farms of western Oregon are suitable for spring lamb raising. Lands that will grow grain, hay, clover, vetch and rape are lands well adapted to the industry. Those lands which have been robbed of their fertility and exhausted by continuous grain cropping will be greatly benefited by occasional use as sheep pastures.

"The industry requires about the same kind of farm as does dairying, but does not demand the same accessibility to markets. Also more range land can be used. Compared with dairying, lamb raising does not require so great a capital and is not so laborious and confining. While we are not prepared to say that lambs will pay quite as much profit per acre as the most profitable dairying, it is certainly as profitable as ordinary dairying.

"Ideal sheep farms include much rolling, well drained land that will stand a great deal of tramping. Of course, this is a good land for any purpose but it is especially good for sheep.

"Extensive equipment in the way of buildings and apparatus is not required. Sheds necessary to house the flock comfortably may be constructed at small cost. A shed for 40 or 50 sheep was recently constructed at the college at a total cost of \$25 for material. The shed is 18 ft. wide and 60 ft. long. It was built by farm help at odd moments.

"To get good results spring lambs must be grown on sown pastures, such as vetch and oats or rye, clover, rape, or rape and clover. They may not well be kept for scavenger purposes. If turned in with the flock of sheep to clean up fence corners, stubble field and waste places, the lambs mature into scrawny brutes of small value. The ewes can clean up the fields more economically after the lambs are out.

"It often happens that lambs do well until near market time and then begin to fail. They should then be removed to a new pasture for a fresh supply of green feed.

"Ordinarily no grain need be used but when grain is cheap or mutton unusually high a little grain may be fed with profit. Lambs will grow faster and finish better when given a little grain.

"Handled in this way lambs should

gain about a half a pound per day under favorable conditions. With extra care and feeding they may be made to gain almost one pound per day.

"Spring lambs should be marketed when they get fat. This will ordinarily be at a weight of 50 to 80 pounds. There should be no difficulty in getting a lamb into good market condition by the time its weight is 60 pounds."

BARLEY AND SHORTS FOR PIGS.

To the Editor: Which do you consider better for fattening hogs, crushed or whole barley with skimmed milk? I am feeding some small pigs. They chew the crushed barley and spit it out, but do not the whole barley. Also which do you consider the cheaper feed, whole barley at \$23 per ton or shorts at \$26 per ton, with skimmed milk?—B. S. F., Modesto.

ANSWER BY PROF. J. I. THOMPSON.

Barley alone is not very palatable for young pigs and they eat it much better when mixed with some other feed. This accounts for the trouble in getting the pigs to eat the crushed barley and sometimes there is as much trouble with the whole barley.

As far as the feeding value of the crushed barley compared with the whole barley is concerned, we find that a little more of the crushed barley is digested by hogs than the whole barley, undoubtedly enough to pay for crushing. It seems more desirable, however, to soak the barley, either crushed or whole, than to feed it dry. It does not need to be soaked for more than 12 hours but the pigs will eat it much more readily than dry. It can be soaked in water or in the skim milk that is being fed with it. The most economical ratio to feed it in is 1 lb. to 3 lb. of skim milk.

Whole barley at \$23 per ton is somewhat cheaper than shorts at \$26 per ton but for younger pigs we would recommend a mixture of the two rather than either one alone. Especially is it not advisable to feed shorts alone. The following ration should give desirable results. Barley 3 parts, shorts 1 part, and skim milk 12 parts, by weight. That is to say, we would feed 3 pounds of skim milk for each 1 pound of grain mixture. The shorts may be slightly reduced in amount in proportion to the barley as the pigs increase in size.

University Farm, Davis.

LICENSED CREAM TESTERS IN INDIANA.

In accordance with the Creamery and Testers' License Law of Indiana, Acts of 1913, Chapter 340, the testing of milk and cream in Indiana creameries, milk factories, shipping stations, ice cream factories, cheese factories and milk condenseries must be done or supervised by licensed testers. This law takes effect April 1, 1914.

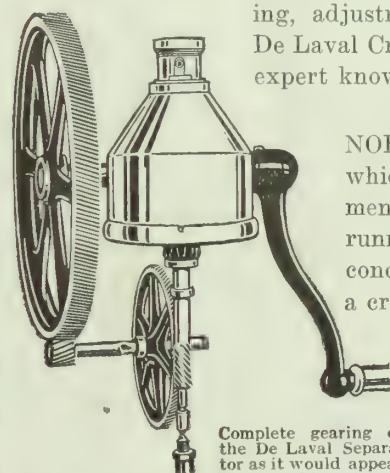
Testers' licenses may be secured upon presentation by the applicant of a certificate of proficiency, properly filled out and signed by the chairman of the Examining Board, and upon payment to the chief of the Dairy Department of Purdue University Agricultural Experiment Station of the annual license fee of two dollars (\$2.00.)

The examination will consist of a laboratory exercise in the testing of milk and cream and of a written test

DE LAVAL CREAM SEPARATORS Their Great Simplicity

THE DE LAVAL CREAM SEPARATOR EXCELS ALL others, not only in thoroughness of separation, sanitary cleanliness, ease of running and durability, but as well in its great simplicity.

THERE IS NOTHING ABOUT THE OPERATION, CLEANING, adjustment or repair of a modern De Laval Cream Separator which requires expert knowledge or special tools.



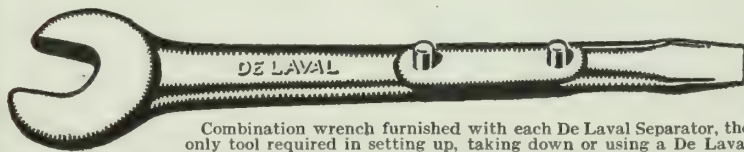
Complete gearing of the De Laval Separator as it would appear if removed intact from the frame of the machine. Note the remarkable simplicity of construction.

NOR ARE THERE ANY PARTS which require frequent adjustment in order to maintain good running or to conform to varying conditions in the every-day use of a cream separator.

THERE IS NOTHING about the machine that cannot be taken apart, removed or replaced by anyone who can use a wrench or screw driver.

In fact, the only tool which is needed in the use or operation of a De Laval Cream Separator is the combination wrench and screw driver illustrated below, which is furnished free with every machine. Visit the local De Laval agent and see for yourself its simplicity of construction.

A DE LAVAL CATALOG—TO BE HAD FOR THE ASKING—completely illustrates and explains every detail of cream separator construction.



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THE LAWRENCE-WILLIAMS CO., Cleveland, O.

covering the subject of composition, sampling and testing of milk and cream. Upon successfully passing this examination the applicant will receive a certificate of proficiency which with the payment of the annual license fee

of \$2, entitles the applicant to a tester's license which is valid for one year and is renewable without examination, if the holder has made a good record and pays a fee of \$2 for the new year.

Breeders' Sales.

JERSEY CATTLE.

D. F. Conant, Modesto, sold to Schmitt Bros., Modesto, Jersey bull, 118,333, out of Victor's Lady Dolly, 237,739.

N. H. Locke Co., of Lockeford, has sold Letty's Valet of L., to A. W. Dade, of Petaluma; also Valet's Native Son of L. to R. L. Jenison, Downey, Cal.

Recent sales by G. McFarland, of Tulare, are: Heifer out of Lady Burdette 2nd to O. A. Jenkins, Tulare; bull, King Theophilis, to A. D. Cowan, Tulare; bull out of Rioter's Glory Gretchen to Donald Cowan, Tulare; bull out of Hope of Ruth to A. B. Sherwin, Tulare; bull out of Ruth Grimm to J. B. Southwell, Tulare; bull out of Nellie Flynn Pansy to Mr. Polin, Tulare; bull, General Grimm, to Dresser Bros., Tulare.

HOLSTEIN CATTLE.

A. W. Morris & Sons, Woodland, have sold Prince Riverside Walker to A. E. Slater, Pacheco; Creamcup Clothilde Cornucopia to P. O. Baldwin, Dos Palos; Gelsche Walker De Kol to The Ezelle Stock Farms, Inc., Klamath Falls, Ore.; Lorena Korndyke De Kol 2d, and Lorena Korndyke De Kol 3d to M. D. Tognazzini, San Luis Obispo; Korndyke Hengerveld Walker to Taplin Brothers, St. Helena; Prince Gelsche Walker 2d to F. L. Mosier, Modesto; Prince Aralia Walker to A. J. Stalder, Riverside; Aralia King Acme to J. H. Harlan Co., Woodland; Creamcup Korndyke Cornucopia to H. G. Armstrong, Woodland; Lorena Korndyke De Kol to John Borina, Modesto; Sir Nydia Creamcup to El Talcoa Ranch Co., Napa; Lorena Gerben Korndyke to E. P. Hunt, Beckwith; Hermana Fayne Concordia to Philip Hartwick, Camino; Prince Gelsche Walker 3d and Lady Netherland Jewel to T. A. Little & Son, Stockton; Lady Kapple 2d to Starin & Sutley, Stockton; Segis Riverside Pontiac to Hugh Nisbet, Chimacum, Washington; Lorena Johanna Korndyke to Mrs. Asa T. Weeks, Pescadero; Anselmo Crane 2d, Dora De Kol Jeek 2d, Lady Silver Gloss De Kol, Lady Kapple Cornucopia, Lakeside Model Wayne, and Cleopatra Roselinda to B. F. Driver, Sacramento; Prince Abbecker Walker to Fred March, Yolo; Segis Bergsma Pontiac to L. E. Crellin, Yountville; Sir Segis Pontiac Artis, Netherland Vale Korndyke and Colantha Sir Pontiac Aaggie 2d to F. M. Helm, Fresno; Sir Pontiac Spoford De Kol, Sir Pontiac Salambo, and Lakeside Model Prince to Pleasant Valley Farm, Coalinga; Emperor Netherland Segis to O. E. Martinelli, Point Reyes Sta; Tula Pietertje Ignaro to A. F. Scheidecker, Blacks.

T. J. Gulkerson of Lenoore, reports the sale of the male calf, Stratford Sir Sergis Lad, to C. E. Coe, Stratford.

J. W. Benoit reports the sale of several young bulls from his herd of pure-bred Holstein-Friesians. Francis Fiorini, of Delhi, purchased a yearling bull whose dam is Koraba Electa, who as a three-year-old has an A. R. O. record of 14,362 lbs. butter in seven days. This record was made two months after calving. Electa E., the grand dam of this bull has a record of 21,34 lbs. butter in seven days at the age of 10 years, 10 months. This bull is backed by strong breeding and individually is a fine specimen of the breed. He will be reared for breeding purposes by Mr. Fiorini, who is a prosper-

ous and progressive farmer. Mr. Benoit also sold the six-months-old bull of Koraba Electa to R. H. Davis of Paradise. Peleg Pontiac Ruby Burke was sold to M. Vievera of Wood Colony to head his herd of pure-breds. Another purchaser was David Salfield of San Francisco, who purchased a six-months-old bull whose dam is Daniesela who has a seven-day record, at the age of 15 years, of 16,313 lbs. butter. Mr. Salfield also purchased two young heifers. These will be shipped to his ranch for the foundation of a pure-bred herd.

R. F. Guerin of Visalia, reports the following sales from Sunnyside herd: Holstein-Friesian Bulls—Fayette Sir Walter to D. S. Heffelfinger, Tulare; King Wilmont Hengerveld to T. Settemire, Porterville; King Kenilworth Hengerveld to H. B. Clark, Tulare; Count Manzanilla Hengerveld to R. C. Sturgeon, Tulare.

SWINE SALES.

W. A. Young of Lodi reports the following sales of pure-bred hogs: A. B. McClaughery of Los Angeles, 9 head, headed by one of our herd boars, Royal Chief, and a yearling boar, also Miss Nelson, Maids Daughter, and six other sows all to be recorded. This last young sow is one that took first prize last fall at Sacramento. These sows together with Royal Chief, gives them as good a herd as anyone has. Other sales were: One B. to The A. Brown Co., Kernville; One B. to The Newhall Land Co., of San Francisco; Clinton Moore and 1 sow, Inwood, Cal.; W. L. Merrill of Colusa, 1 sow; J. W. Wakefield of Acampo, 1 sow; L. M. Pope of Acampo, 1 sow; Ammon L. Johnson of Gridley, 1 sow; Geo. H. Barton of Clements, 5 sows; F. H. Duden of Lockford, 3 sows; R. S. Clark of Elmira, 1 sow.

Mr. Young purchased five sows from F. D. Winn of Randolph, Mo., These sows are from Master Meddler 2d., one of the best hogs in the U. S. today.

BUTTER PACKAGES MUST ALLOW FOR SHRINK-AGE.

On the 14th day of April, 1914, new laws will go into effect covering the weight of package butter. To aid the producers as well as the brokers in selling, the San Francisco Wholesale Dairy and Produce Exchange has sent a circular letter to every creamery in the State, explaining the demands of the new law. Following are excerpts from the letter:

It is imperative on the part of all manufacturers of butter to see that their shipments of butter to the San Francisco market weigh full two pounds net to the square upon arrival in San Francisco, and the the squares be uniform in size and weight.

Butter being subject to more or less shrinkage, it will be necessary for shipments to leave the shipping point at half to one pound net content over-weight to the case containing 30 two-pound or 60 one-pound squares.

It has also been decided to adopt a uniform sized cube for solid packed butter, the dimensions of which shall be 12½x12½x13½ inches inside measurement. The same allowance for shrinkage should be allowed at shipping point when weighed.

All export shipments from San Francisco in future must meet the established rules of the Australian

and New Zealand markets if California dealers and manufacturers expect to successfully compete with those markets for outside business.

At the Portland Union Stock Yards last week, prices were good for high grade stuff, especially hogs. Prices on beef ranged from \$7.15 to \$8.00 for steers; hogs \$8.45 to \$8.60; cows \$6.25 to \$6.85; sheep \$4.35 to \$6.75. Receipts were rather small.

Live Stock Directory

DAIRY CATTLE.

REGISTERED HOLSTEIN COWS—For sale, five large well marked registered Holstein cows, 4 years old; bred in best Eastern herds. Also two-year registered bull, sired by one of best bulls in State; fine size ready for heavy use. Write or call for prices, pedigrees, etc. H. S. Van Vlear, R. 2, Lodi, Cal.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2 Modesto, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey Prop.

CHOICE REGISTERED JERSEYS—1 Golden Lad bull, 4 fresh young cows, \$600; 1 yearling heifer, \$75. F. E. Thayer, Live Oak, Cal.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64 Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

FOR SALE—Good registered Guernsey bull. K. L. Evans, Gilroy, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas

HEREFORDS—Gay Lad 6th heads herd O. Harris & Sons, Harris, Mo

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

SWINE.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

MULEFOOT HOGS—Best for Pacific Coast. Jno. Dunlap, Williamsport, Ohio.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D. Riverside.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

FOR SALE—\$1000.00—The imported Percheron stallion Castalliane, owned by the Imported Draft Horse Association of Bethany, Cal. Castalliane has stood for six years in this locality, and his colts are too numerous. He can be seen at the ranch of W. Peterson, 1½ miles south of Bethany. Pedigree can be seen at Secretary's office. For further information address C. Schlichtman, Bethany, Cal.

FOR SALE—Black Percheron registered 7-year-old stallion. Good foal getter. State license to serve. Will sell, for want of use, at low figure. Sufficient time allowed purchaser for horse to pay for himself. F. B. Chandler Co., Vacaville, Cal.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Lladan, Cal.

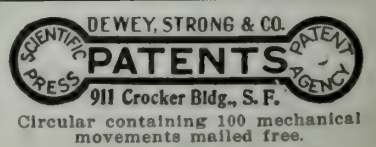
BLACK JACK FOR SALE—Price \$500; 7 years old, is quick and sure. We have 6 more jacks. We took all prizes for mules at State Fair, 1913. Kelley & Son, Lodi, R. D. 3, Box 93.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

MISCELLANEOUS.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.



GRAZING OUT JOHNSON GRASS AND BERMUDA.

[By Director R. H. FORBES of the Arizona Experiment Station.]

Johnson grass, our worst weed, is scattered throughout the warmer parts of Arizona, extending from the watersheds to the river courses, thence into canals and upon irrigated lands. There are no easy methods of getting rid of Johnson grass, which must be thoroughly understood and combated in the various situations in which it occurs. The problem of Johnson grass control varies between ranges, canal banks, dry roadways, and cultivated fields.

There is probably no way of exterminating established Johnson grass on extensive ranges where it has become somewhat widely established. Along canal banks, wet with constant water supply, one means of restraining the grass is to plant useful trees that densely shade the ground. Johnson grass does not prosper in dense shade and, therefore, may be controlled by plantings of cottonwoods, figs, olives and other useful trees upon the banks of main canals and laterals. Along ditches, roadways, railroad rights of way, and in waste places infested with Johnson grass, an effective means of Johnson grass control is sheep, especially the Tunis sheep imported from Africa, which have proved so resistant to our southwestern climatic conditions. These sheep graze closely the growing Johnson grass, even down to the surface of running water in ditches, and not only prevent it from blooming and maturing seed, but also weakening its root systems as it renews its growth therefrom so that in course of time the plants may easily be destroyed by cultural methods. In this way an expensive weed is not only destroyed without serious cost, but at an actual profit in wool and mutton to the farmer.

Solid fields of Johnson grass may best be reclaimed, beginning early in the spring, by withholding irrigating water, then grazing the Johnson grass that springs up from the root stocks by means of sheep until the growth diminishes in vigor. The dry ground, with its depleted mass of root stocks, may then be plowed and the exposed root systems further grazed by means of hogs. With the advent of hot weather the plowed field may be harrowed from time to time with a spring tooth harrow and further grazed by means of sheep and hogs. By fall the Johnson grass will be greatly weakened and a winter growing crop of grains or vegetables may be planted. The following spring, if the Johnson grass is sufficiently under control, a cultivated crop, such as cotton, cantaloupes or corn may be grown, the Johnson grass being kept under control by cultivation given the crops. A repetition of a whole, or a part, of this program will further serve to keep the grass under control until finally the ground is nearly or quite free of the grass.

WHO WANTS RANGE FOR GOATS?

The Supervisor of the Monterey National Forest announces that there will be available this season two distinct unused, vacant ranges suitable to the grazing of 2000 head of goats. These ranges have been unused for a number of years, and since the establishment of the Monterey National Forest

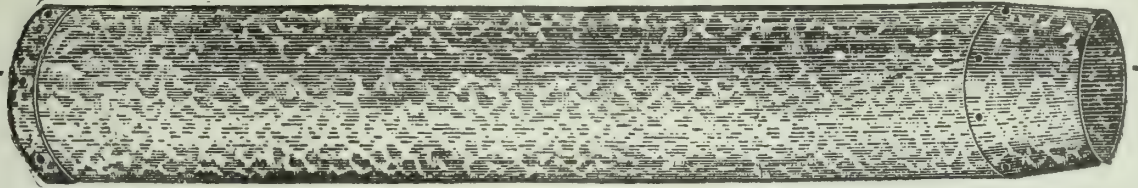
"As TRUE as the Name" "AMERICAN"

Made in lengths of ten feet each, from a single sheet of galvanized steel, with a heavy taper collar riveted to one end.

"AMERICAN" pipe is made with the "lock seam" or turned joint—contains no rivets, except at collar. A riveted joint has only 70% of the strength of the sheet metal, while a turned joint has 100% or more. This means that "AMERICAN" pipe will last as long as the

AMERICAN STEEL PIPE & TANK COMPANY

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LOS ANGELES



in 1907 have not been utilized for the grazing of this class of stock.

One range comprising approximately 25,000 acres is situated on the headwaters of the Arroyo Seco river, in Township 20 South, Range 4 East, and has an estimated carrying capacity of 1,200 head of goats for the regular summer grazing season, namely, from April 1 to September 30. This range is accessible either from Soledad up the Arroyo Seco river by county road, distance 23 miles, and the balance of the distance, 17 miles, by government trail; or by the way of Jolon, up the San Anton river and government trail. Distance about 30 miles.

The other range is located in Township 19 South, Range 4 and 5 East, on the headwaters of Finches creek, a branch of the Carmel river, west of Fresno canyon, and comprises about 16,000 acres of broken brush-covered country. The estimated carrying capacity of this range is 800 head of goats for the regular summer season. This range is about 22 miles from Soledad and about 35 miles from Salinas, and is accessible by county roads.

The forage on these ranges consists of laurel, pea vine, mahogany, poison oak, buckthorn, bear berry, different varieties of lilac and different species of oaks. Along the watercourses and in the open glades grasses abound in sufficient quantity for the necessary stock used in the care of the herds.

For further information apply to Forest Supervisor Norman H. Sloane, Arbolado, California.

[Uncle Sam is making us the goat in carrying a free advertisement for him. We hope it will help some reader.—EDITOR.]

PREVENTION OF NAVEL ILL OF COLTS.

The many requests for information regarding the ailment known as navel ill of newly born colts which come to the U. S. Department of Agriculture, indicate that it exists in many localities. The unfavorable outlook after the appearance of the disease, together with the fact that the disease when present requires the attention of a veterinarian, demands that the breeder should concern himself with its prevention. This disease is also known as joint ill, omphalophlebitis, septic arthritis of the sucklings, and pyosepticemia of the newly born.

The disease is caused by a micro-organism, and several bacteria have been suspected of being responsible. Every one of the suspected organisms is found abundantly in manure and objects contaminated with manure. The infective material gains entrance into the colt through the open umbilical cord as a result of its coming

in contact with litter, floors, or discharges from its dam contaminated by one of the organisms which cause the trouble. There are cases on record where the infection has taken place before birth, and while some investigators claim this method to be the principal mode of infection, still the prophylactic measures adopted to guard against the infection through the navel cord have given good results in a large number of cases. Since infection before birth can not be controlled satisfactorily, we are justified, for all practical purposes, in preventing navel ill by guarding against the infection through the cord at birth or soon afterwards.

Cleanliness of stables where pregnant mares are kept must be insisted upon. This is especially necessary where outbreaks of navel ill have been known to exist. Mares in the last stages of gestation should be placed in a box stall which has previously been cleaned and disinfected. The bedding should be frequently renewed, and the external genitals and neighboring tissues should be kept clean and disinfected with a 2% solution of carbolic acid or 1% liquor cresolis compositus, or any other reliable disinfecting agent. Operations for opening abscesses and removal of afterbirths from cows should not be executed in the immediate vicinity of mares in an advanced stage of pregnancy.

The foal when dropped should be placed on clean bedding. In any event, the cord of the foal should be washed in a disinfectant solution and tied at about 1½ inches from the navel with a band or string which has previously been soaked in a disinfectant solution. The navel cord is then severed about one-half inch below the band with a sharp pair of scissors and again disinfected. The ligature should, however, not be tightened until pulsation of the vessels in the cord has ceased. The stump of the cord is then painted with strong carbolic-acid solution, tincture of iodine, or a mixture of equal parts of tincture of iodine and glycerin. The stump should be washed daily with a disinfectant and either painted with iodine mixture or carbolic acid or dusted with some reliable antiseptic healing powder. The parchment-like dried stump may be cut off after five days and the navel wound washed with a disinfectant solution and dusted with powder until healed.

The cases of navel ill resulting from infection before birth can not well be guarded against. By keeping those mares which are advanced in pregnancy in good physical condition, the fetus will be expelled immediately upon the opening of the uterine cavity.

"Superior from Every Standpoint" Surface Irrigation Pipe

sheet steel. It is practically indestructible, and it is impossible to produce leakage in this pipe, as the turned seam is DOUBLE LOCKED. It is the pipe you will eventually use. Write for Illustrated Catalog.

We also manufacture steel tanks, wagon tanks, watering troughs, dipping tanks—in fact, anything in sheet metal. We make RIVETED pipe for underground use only.

When any of your STOCK are **SICK**

Don't use
guess work



IMMEDIATE ADVICE FREE

GIVEN ABSOLUTELY FREE

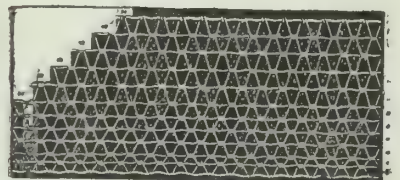
In the meantime write for Dr. Korinek's List of Remedies for all the known ailments of Horses, Cows, Pigs, Sheep, Dogs, Cats and Poultry, its free.

Dr. Korinek is a Veterinarian of National reputation. He has served four years as President of Oregon State Veterinary Board and State Veterinarian under two governors.

Don't wait—write today for FREE literature, and a sample of Dr. Korinek's Gail Powder.

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KOKOMO Self Regulating FENCE



STRONG Because it is made of large High Carbon Steel Wires.

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Write for catalogue and price list.

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BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00 50-dose pkg. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.50

Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O. we pay charges and ship promptly. **THE CUTLER LABORATORY, Berkeley, California.**

FREE—Wholesale catalogue of everything for farm and home. Engines, Pumps, Fence, Wagons, Harness, Furniture, Groceries, etc. **THE OLD HICKORY SUPPLY CO., Inc., Dept. 3, 85 2nd St., San Francisco.**

Once the infection of the navel cord has set in, the cord should not be ligated, but should be washed in a disinfectant solution and a veterinarian called for the subsequent treatment.

Timely Hints on Bees and Beeswax

[Written for the PACIFIC RURAL PRESS
by R. E. HODGES.]

Bees are beginning to fly. It is time for the spring inspection.

Don't irritate the bees with sudden motions, violent actions, new overalls, a stable scent on your hands, etc., and they won't irritate you. White cotton clothes signify to the bees that you are a gentleman.

Inspect every hive carefully on a warm day. Chilling the brood will re-

duce your working force and profits. Puff a little smoke into the entrances of a dozen hives. Then pry up the lid of the first one and puff a little smoke over the top of the brood nest. In a moment, the bees are quiet. Take out one of the central sections of brood. If the comb is full of living larvae your queen is active and the colony will be strong when flowers are plenty. If the comb is empty, look farther for the queen and if you don't find her, get another one from a queen breeder. Scent her and the colony with tobacco smoke not too strong and she will be accepted at once.

If you cannot buy a queen, give the colony some brood from another and they will raise a new queen in nearly three weeks. Meanwhile the colony will have dwindled by death of workers unreplaced. So it is better to have the queen at once.

If the colony lacks food, give them equal parts of sugar and hot water, uncooked, in one of the many feeding devices on the market. This practice is good anyway, for it stimulates brood rearing.

If the colony is weak, give it a frame or two of brood from another stronger one, or combine it with another weak one, or better still, be sure it has a vigorous queen and then feed it.

A swarm of bees per acre in your orchard will increase the crop of fruit by the surer fertilization of the blossoms. L. D. Butt of Placer county keeps about a hundred hives winter and summer in a shed among olive and peach trees. They are arranged two deep with enough room over each for handy manipulation. A board is left off the sides of the shed in front of the hive entrances which face outward.

Bees are among the strongest insects. A few of them clinging to a limb will hold the weight of a whole swarm of twenty to forty thousand.

GRAFTING WAX A SIDE LINE.

Paraffine grafting wax does not withstand weather so well as that made with beeswax, according to Mr. Butt of Penryn who keeps about a hundred swarms of bees in his orchard as just stated, and sells extracted honey, melting the comb caps into beeswax.

In preparing for extracted honey, 8 or 10 frames are fitted into and fill a box placed above the brood-rearing chamber of the hive. These are removed when filled with honey. The caps of the honeycomb cells are cut off with a sharp knife and the combs put into a centrifugal machine which throws out all the honey, leaving the comb in its frame. This is put back into the hive, the bees fill it again and build the cells out to their former length if there is plenty of nectar in the flowers. Thus the same comb is used over and over again. Since several pounds of honey are consumed by the bees in making one pound of comb, this system saves that much honey. Though extracted honey is only about half the price of comb honey, the bees make about twice as much of it and Mr. Butt has the caps of the cells besides, to use for beeswax. He estimates that a hundred swarms will yield about two pounds of beeswax each per season in this way.

The caps are put into the oven and when melted to liquid wax, they are strained from the "slum gum" frame-



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work of the cells and cooled in water. Comb in which young bees have been reared makes a darker cheaper wax but all of it is good for grafting wax.

During winter, when grafting is going on and other ranch work is slack, the grafting wax is made and sold to ranchers of his vicinity, a thousand pounds last year and this season's output will be the same. It retails at 20c. per pound.

Beeswax is melted in a kettle with rosin and linseed oil at the rate of one pound to three pounds to one pint, and enough lamp-black is stirred in to blacken the mixture. When it has been stirred thoroughly, the grafting wax is poured into common paper bags which hold about seven pounds each. The Penryn Fruit Co. alone bought nearly 175 pounds this season for use on its own ranches and those under its care.

Olive growers of the Lindsay district in Tulare county recently organized the Lindsay Olive Growers' Association, capitalized at 50,000 shares of \$1 each.

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We also make a full line of Gates and Valves for cement pipe irrigation.

Pointed Suggestion on Good Roads

To the Editor: In view of the present commendable agitation for good roads and the very great importance of starting right, I am moved to send you the enclosed article on the subject written by an educated physician for the Elmhurst Press. I believe that such articles often presented for the consideration of the public would bear fruit, and therefore hope you will print it in full.

We are very fond of calling ourselves a smart people. Perhaps we are but when one goes abroad he is inclined to talk less about it, at least as to some important matters. This European system has been decided on after years (centuries) of experience and if we are really "smart" we should be smart enough to profit by their experience.

Our ways are wasteful and shocking. This system would insure us the perfect roads which add so largely to farm values; would furnish a way of earning a living to a number of old men past their prime, but who could do such work well and would cost no more than our present shameful methods. And California, of all states, is the most interested in attracting the kind of people who look for the best in life. When I was in Europe I noticed that many of our states were hardly known but everyone had some knowledge of California.—JOHN R. CASE, Chicago.

HOW TO MAKE AND KEEP GOOD ROADS.

The very important article to which Mr. Case alludes is as follows:

In maintaining and in constructing roads, Germany, Austria and Switzerland are far ahead of us. All public highways are under government control, and in the care of such men who are trained in this line of work.

HOW EUROPEAN ROADS ARE MADE.—The country roads are all narrow, varying from 18-22 ft. in width. In appearance they resemble the macadamized streets of our city parks. The surface is smooth, round, free from ruts, chuck holes and bumpy bridges. The entire roadbed is utilized in traveling, and nowhere do they drive in one path or rut as we do. On either side is a small ditch or gutter to receive the water from the road's surface during heavy rains.

Immediately to the outside of this little ditch, or between it and the roadbed, are planted trees, chiefly fruit trees, which line the course of the road. At short intervals there is deposited at the edges a small load of crushed stone, to be utilized for immediate repairs, as the conditions demand.

The land adjoining the roads is cultivated up to this gutter or line of trees. In this way hardly a square foot of usable soil is wasted.

When a road is being built the entire width of the road is crushed. As a rule, larger stones are put at the bottom, these are covered with ordinary sized crushed stone, and then it is rolled with a heavy roller. The surface is then covered with fine gravel, and it is then rolled again. Others are made by covering the crushed stone with several inches of sand, and the sand is covered or set with blocks of stone about 1 to 2 in. square, then rolled to be pressed into the sand.

The crushed stone that is used for building their roads is the limestone, or a reddish stone which is taken from the mountains. The thickness

of the roadbed is from 12 to 14 in. Sufficient dirt is placed at the edges to prevent the stones from slipping away.

THE MAINTENANCE.—The government appoints a competent man, known as the road man, to take care of the roads after they are built. The distance that is assigned to him depends on the amount of traffic there is on it. His duties are to devote his entire time in keeping the road in good condition, and make immediate repairs when necessary. He is always seen on the road with his wheelbarrow, shovel and broom. He keeps the surface round and smooth. When ruts or chuck holes begin to form he closes them by sweeping, or if necessary, he hauls the necessary amount of crushed stone from that which has been deposited at the edges, with his wheelbarrow and fills them. He also keeps the edges down, so that after a rain the water readily drains off.

THE ROADSIDES.—The edges are kept free from board fences, free from bushes, which are frequently the cause of collisions and accidents; free from tall and unsightly weeds that only scatter their seeds into the field and catch the snow to blockade the traffic. The fruit, when ripe, is sold on the trees at public auction, and the money thus received is put back into the road fund. This double row of trees not only adds much to the beauty of the roads and furnishes protection against the winds and heat in the summer time, but are a source of great income; an example well worth imitating. Hardly ever is this fruit stolen, as the attempt is punished by a heavy fine.

A CONTRAST.—In comparing the European country roads with those of ours, I would say: The roads there are only 18-22 ft. wide, but the entire surface is utilized for driving; here they are 60-75 ft. wide, with only a narrow strip in the center, frequently only one rut to drive in.

There the entire road is round and smooth, with no chance of water to collect on the surface; here the edges are often higher than the center, which frequently is filled with water that cannot get off except to wait for the speed of the coming automobile to splash it out and with it goes a lot of crushed stone.

There the land is cultivated up to the edge of the road, no usable soil is wasted and all is kept clean; here thousands of acres of good land is wasted in the wide, deep and often dangerous ditches between the fences and the roadbed, only to grow unsightly weeds that scatter their seeds into the fields and lawns.

There ruts, chuck holes and bumpy crossings are rarely seen that discomfort and disturb the peaceful mind of the passengers; here they are a wear and tear on horses, wagons and automobiles, which increases the cost of transportation.

There the roadbed is wide, made well, and afterwards kept well by competent men who limit their time to care of them; here they are entrusted to men often not qualified, whose occupation for a living is such that it detracts them from their duties to the roads, and then offer the familiar excuses, "Have no time," or "Can't get teams," and on account of this, our roads often go to waste and ruin.

Although Europe has the advantage

of over 500 years, a city of nearly 3000 inhabitants and of the age of Elmhurst, commanding also such tax returns and other resources, should have its streets in better condition.

I hope that the time is not distant that our government will do away en-

tirely with our so-called "commissioners," take matters in their own hands and appoint men who have become fully qualified, limit their time to this work and imitate the methods of the European countries in maintaining and constructing our roads.

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We mean a "baby" United States Cream Separator. Get started with a small one and you'll soon wonder how you ever got along without it. The No. 40 is the smallest and youngest of our complete line. Capacity 175 lbs. of milk per hour. Large enough for one or two cows. Simple enough for a child to operate. Good enough for the President of the United States.

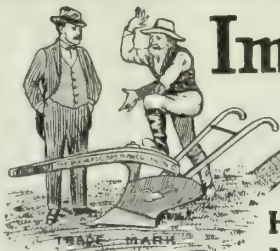
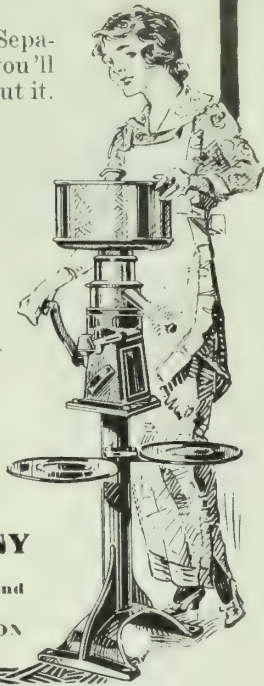
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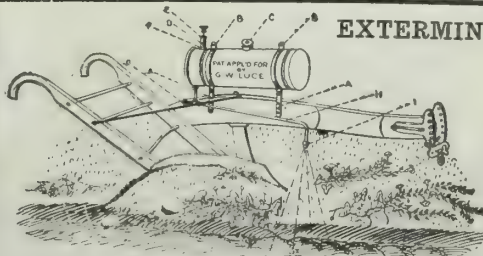
Any wearing part of this plow, either mould-board, landside or share, can be changed from steel to chilled iron or vice versa. Parts are also interchangeable on wood or steel beam plows. Mouldboards are so shaped that furrows are lapped in perfect regularity without a break. A minimum of friction insures light draft.

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San Francisco, Cal.

Breeding In and Breeding Out.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

Poultrymen, as a rule, breed on the hit and miss plan, after the making of a rag carpet. If they think anything at all about it, it is the fear of inbreeding, while the idea that certain qualities can be bred in or out at the breeder's option is not often considered. But it is a fact that we can breed to a great extent the kind of fowl we want.

One of the first things a breeder of the heavy breeds should breed out is the continual habit of broodiness or wanting to set just when we want eggs. Of course some hens are more persistent than others, because they are nearer the wild, and the instinct is stronger, so it is time wasted to bother with them, just keep them for mothers. But the hens that make only indifferent setters, that just want, or think they want to set for a few days and can be easily broken up, these it pays to fuss with. If they are normal layers, or extra good, so much the better, the eggs that are laid just about the time they get broody should not be used for hatching, nor those she lays just after being broken up, but set all you can of those laid between these two stages. If this plan is followed for two or three generations you may break at least 75% of the third generation of the broody habit, and in one or two more generations the instinct will be practically dead except in a few individual cases. Good sitters and mothers should not be meddled with, for they are valuable in emergencies.

BREEDING FOR WINTER EGGS.—Laying eggs in winter is chiefly a habit that has been bred into hens many times without the person knowing any reason for doing it other than wanting some early chicks for broilers. If these pullets are taken care of, even the first generation, they make better winter layers than those hatched later in the season. And if eggs from the best layers of the hens that lay late before molting are hatched for two or three generations we can breed the winter egg habit into our hens so they will be puzzled to know winter from summer. Bear in mind I am not saying that these hens will lay in winter just because they were hatched in winter or late fall, because unless given proper food and conditions, such as you would give hens that you were striving to make lay, these hens will do no better than others, and if they are not bred from the right kind of hens and a male bird that will transmit his qualities to them, they will not rank high in egg laying, but still they will lay in winter just as they would in summer. If you are breeding hens that only lay 100 eggs a year, it is safe to say that if these hens lay part of their eggs in late fall, before molting, and the eggs are hatched as before described, you are not raising the standard of laying but simply helping the hen out with her idea of laying her eggs, or part of them in the winter months. There is not anyone that knows any too much on these important points, but some have gotten a much better working knowledge during the last few years.

"Lady Show You," the white Plymouth Rock hen, that made such an excellent record last year at the National egg laying contest, has never wanted to sit for two years and is

nearing the 200-egg record for her second season. A very high price was paid for this hen, and yet if she was not of the kind of hen that could impart her qualities to her progeny, the money was spent foolishly. In any case I would rather own a cockerel of hers than a pullet, because he could, if the mothers qualities had been transmitted to him, affect a greater number of eggs than one pullet could be expected to lay. But on the other hand if that hen is the right kind and can transmit her qualities to the female side and she is mated to one of her own sons, we might expect a phenomenal lot of layers, nor should we be disappointed.

Another thing that is going to help raise the standard of laying, is the many egg laying contests throughout the country. They create inquiry and very few people like to be left behind in the race. Inquiry provokes ambition and before they know it somebody is in the race to better such a one in some way, and each one that enters the race brings with him a little more enthusiasm and so it goes. Enthusiasm is a good thing to have if we don't let it carry us away; when it gets the reins and reason is left behind we have the crank.

BREEDING OUT IN THE FANCY.—While the breeder is striving for a bigger egg yield, or a winter egg flock, he can also be improving the looks of his flock. The only sure way to breed out such defects as will disqualify his birds in the show room, is not to hatch or sell for hatching any eggs from fowls having the defects. Simple, but absolutely sure, and that's more than can be said for any other system of breeding out. If a cockerel or hen is bred that has say, a defective comb, to one with the same defect, it is sure to crop out in the progeny, not that all will be affected, but some will and very often it will show in those birds that are otherwise good. Sometimes I am asked if a hen having a bad comb will transmit it to her pullets, but without examining the hen I could not tell, but the probabilities are that if she is mated to a male having a comb that is strong where the hen is weak, he will correct the fault, anyway he will if he is more prepotent than the hen. And that is where the Hogan system comes in, it's a sort of Phrenology question that is answered right.

It is much easier for the fancier to breed defects out of his flock than it is to breed the qualities in that he wants, but it can be done only it takes time and patience.

We got the first lesson in that from Jacob of Bible lore, when he bred the ring streaked cattle for his father-in-law to be.

PREPOTENCY.—There are certain things that the male decides anyway, and others that are more easily changed by the hen, but the main thing is to know which of the two is the strongest in that faculty of transmitting. In general parlance the male dominates the color and the female the shape. Outside of that it takes accurate knowledge of the individuals to determine which will give its qualities to the progeny. So we can see that this question of breeding in and breeding out is a somewhat enigmatical problem on the face of it, and yet "easy as rolling off a log when you know how."

In mating pens for breeding it is a safe rule not to mate extremes in color or size, for the product is likely to be unsatisfactory from more points than one, and this is especially so with the solid colors. A very dark buff male and a light female will produce a lot of chicks that are mealy in color or there may be some extremely dark and others moderately so, but as a

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rule all will have mealy patches in the plumage.

I mention this because it is such a common failing of those who do not understand the art of mating for results. And this is something one person cannot tell another, they have to get it themselves, either from experience or from observation and sometimes it appears to be a sort of artistic quality of the individual, anyway it must be gained or there will not be very much improvement in the stock, except through the more expensive way of culling. In the very best of matings there are always some culls and these should be fattened for table purposes, for their is nothing saved or gained by breeding from stock that are defective in any way. If everybody practiced culling, both in the fancy and utility, we would soon have better poultry. Not only that but we would have less and fewer failures in the poultry business. In mating for utility the color should be kept in mind so that the flock does not degenerate, but the main point must be the capacity of the birds for the purpose we want them for.

BREEDING OUT SICKNESS AND BREEDING IN HEALTH.—And these two features are after all the most important of all. And they are the most easy to do, for in order to breed health in the flock we must breed only from those individuals that have always been full of vitality and health. If this is done and all weak stock, all such that have even been affected with a slight cold or shown any weakness at all are eliminated from the breeding yards, this will work out the two problems at one throw. For healthy fowls that are fed and cared for right will produce livable healthy offspring that can be raised with proper care into just as healthy specimens as the parent stock. We can never have good laying qualities with weakness, for a hen must be strong enough to stand the strain of laying or she will give up the ghost and die, provided the egg laying habit has been bred into a weak constitution. So the poultryman's slogan should be "health and vitality first" and when that is reached then build up to whatever he wants.

RAIN VERSUS EGGS.

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

A subscriber from the northern part of the state writes to ask what she can give her hens to offset so much rain. That's another puzzling question and one that can only be answered by the one that knows the financial condition of the questioner. If I lived north and had the means I would build just such poultry houses as was described in the article on the Bandina Poultry Ranch. Mr. Suits has the rain question and eggs down to brass tacks, providing everybody keeps still tongues I don't see how his chickens are going to find out winter from summer. He has them fooled all right, and the past week I have wished my chickens were as well sheltered. For the very best thing for all small breeds is to keep the feet and legs dry, this is almost impossible when they are exposed to the weather.

I do not know of anything that can be given, inwardly, except plenty of grain, I always feed more dry grain when the ground is wet under foot so as to allow for the extra heat needed in the fowls body. I know that in cold wet weather hens require more

food if they are to keep up their own health and lay eggs and I feed more grain because that lasts longer than mash of any kind and keeps the internal organs busy. Corn is a very good grain to feed at night where there is much wet weather, it furnishes more heat than wheat does and it takes longer to digest, hence the hens do not get hungry so early and stay on the perch longer.

The larger breeds are not so sensitive to cold or wet, being more heavily feathered. I do not notice any difference in the egg yield since we have had rains, but I do know this it would have been a lot more comfortable for me to take care of them if they had been under cover.

Watch the poultry while feeding. Don't forget that cold wet ground is hard on hens that are just coming from the molt. The system is not so able to throw off a slight cold, and young chicks that get chilled very soon get cold which if not taken in time may turn to roup. In the "Buff Orpington Special" I find a remedy for roup that is not very common, but it appeals to me as being good so I will give it to your readers.

GOOD ROUP CURE.—"Into 8 ounces of olive oil put as much camphor 'gum' as the oil will absorb and then add 80 drops of carbolic acid. Put some of the mixture on the sides of the nostrils, keep out of eyes, over the eye, and in under the wattles. In serious cases this should be done three times a day, giving one treatment at night. Except in severe cases the swelling should disappear in a day or two. Always isolate the sick fowl. When roup takes the diptheretic form, whittle a stick into a small spade-like shape, probe and remove the white substance from the throat then sprinkle powdered borax in the throat. One or two hours after take the bird under your arm, hold the beak open and pour some of the roup mixture down its throat and let it run into the opening of the windpipe, then quickly turn the head of the bird downwards and let the mixture run out. A few treatments will cure."

EGGS BY THE ELECTRIC ROUTE.

How a hen, says the New York Herald, may be cajoled into laying more eggs than is natural was related at the poultry show at Madison Square Garden by William H. Cook of Orpington, England. Mr. Cook, by the way, is the son of the man who brought out the breed of Orpingtons, which is held by many chicken fanciers to be the greatest producer of eggs that ever roamed a barnyard. He said that he found remarkable results were obtained by the use of artificial daylight. By this system, he said, the older birds increase in vigor and health and the younger ones grow faster, because they have more time to eat than is furnished by the ordinary day. In his poultry houses, he said, he had 300 electric lights installed of various candle power. Just before it begins to grow dark he turns on his entire collection of bulbs. His stock are then fooled into the belief that the sun has not yet set. A couple of hours after the regular day has been finished he turns off the big lamps of 32 candle power and half an hour later the ones of 16 candle power are shut out. The sleeper of the birds then begin to climb up to the roosts for the night and soon most of them are on their perches. For nearly an hour the 8-

candle-power lights are left to send out their light, when they are turned off for the night. By the time the last gleam of artificial daylight has gone all the chickens have gone to roost. Mr. Cook declared that if the lights were turned off all at once the birds would be so surprised that they would not know enough to get on to their roosts and would fall asleep on the ground. If Mr. Cook can be believed his egg output has been doubled since he learned to play this trick in his hennery.

PEANUTS FOR POULTRY.

To the Editor: Can peanuts for poultry be grown in the Sonoma valley? If so, can you please advise method of culture, drying, etc.—J. M. R., Berkeley.

[Peanuts do not usually amount to much except on light, loamy soil, in to which the blossom can readily bury itself, and still retentive enough to keep the plant supplied with moisture. If you wish to try a few get the raw peanuts from dealers and cover them about 3 in. deep, about 18 in. apart in rows about 3 ft. apart to allow room for cultivation. They must not be planted till frost danger is over—about like corn. From sandy soil the nuts are readily pulled and allowed to dry a few days before gathering. One trouble with the crop for chickens will be the amount of work re-

Poultrymen Pleased

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Read the following letters which arrived just recently:

Dixon, Cal., Jan. 10, 1914.
Pacific Rural Press.
Your paper was certainly the means of turning me in many valuable orders for my stock.

I am, very respectfully,
R. A. HOLDRIDGE.

DIABLO POULTRY FARM
Concord, Cal., Feb. 1, 1914.
Pacific Rural Press.
Replying to yours of the 30th ult., would like to have the ad continued. Have had any number of inquiries through the PRESS and must say that I am surprised.

Yours truly,
C. J. STRUBY.

Oroville, Dec. 22, 1913.
Pacific Rural Press.
I have already had some high-class returns from my "liner" in your poultry column and desire to give you a strong testimonial if you have any use for same.

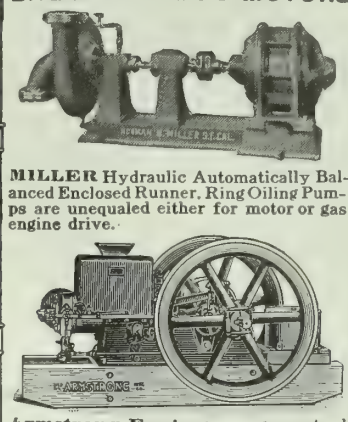
Yours very truly,
E. A. JACKSON.

If you have baby chicks, breeding stock or eggs for hatching for sale, a "liner" in our Poultry Breeders' Directory will find customers for you. Display space quoted on application. Address Advertising Dept.

PACIFIC RURAL PRESS
420 Market St., San Francisco.

quired. It would be much cheaper to grow corn in the Sonoma valley.—EDITOR.]

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The Home Circle.

The Colonel's Plan.

It was Rosebud's wedding.

The little white bride was running down the path with her hand clasped in her husband's. After them raced the six tall bridesmaids, with their faces buried in their bouquets, and over them all stormed a cloud of rice.

The colonel gave his arm to the bridegroom's mother, and the two proceeded down the churchyard path. Some misdirected showers assailed them also, and Mrs. Kennedy laughed shrilly as she shook the rice grains off her bonnet.

"Quite superfluous," she remarked, as they found refuge in a carriage and were driven up to the house. The dressmakers' apprentice had been in possession during the ceremony, that all the servants might go to see Miss Rose married. She had stipulated only to have a policeman on the lawn, because of the wedding presents, and had propped all the doors and windows wide, that he might hear shrieks if anything should happen or if her terror of the colonel's wolves' heads and tigers should get beyond control.

The first carriageful drove up to the empty house, and Rosebud and her bridegroom stood side by side, looking down the long room, smiling.

The bridegroom's mother was a woman with a presence; she sailed up in a rustle of heavy silk and Rosebud put up her face nervously to be kissed. She was a little bit afraid of her mother-in-law.

The crowd rushed in and the champagne glasses began their perilous circulation, pingling and tottering. The colonel had ordered a special brand of a dryness beyond disputing, and it acted like a tonic upon the lady guests, who sipped it soberly.

Rosebud's willowy satin train was getting entangled among other people's feet. When she moved, the end of it whisked round suddenly, and caused a great commotion. She looked charming, flushed with the glory of the minute; but there was girlish longing in her eyes when she glanced at the great white cake.

"I want a big piece to dream on," she whispered, squeezing the colonel's arm.

"Oh!" said Archie, reproachfully, and then she remembered that she was married.

Then she disappeared, a little white, radiant vision, to run down the steps with Archie a little later, and dash through a shower of rice into the carriage that was to take them away together. The white rain pattered on the carriage roof, and Rosebud, putting her head out, smiled and nodded.

"A capital plan," said the colonel. He was addressing the aunts and cousins who had come down for Rosebud's wedding, and who were now scattered about the empty rooms. The carriage drive was white with rice, and some fowls had thrust themselves in below the hedge, and were very happy. Inside there were crumbs of hard, white icing upon the carpet and the place looked bare. The afternoon was drawing to a close, and there was to be some kind of a dinner some time; no one knew when or what. The aunts and cousins smoothed out their finery and stretched their smiles; they were

inclined to feel melancholy. But the colonel was very cheery.

"A capital plan," said he. "Old Mrs. Kennedy will have the place ready for them. She is going to live with them, you know, and give them hints, which will be jolly for Rose."

"Humph," said the aunts and cousins. The six bridesmaids turned away from the window. A great deal of rice had slipped down their necks, and their views of life were not quite so rosy.

"Poor thing!" they exclaimed together.

The colonel was going to see his daughter. As the honeymoon was over, the birds must be settled in their nest, and he was eager to see his little Rose in the glow and dignity of her new position. Driving into the town, he put up at a hotel, and marched down the street light-heartedly. Archie Kennedy managed the county bank, and though his "house" was over a shop, as often happened in Scottish towns, the county came in for afternoon tea, and waited up there for their carriages after concerts, besides showing themselves generally kind; for Archie was well connected.

"Mrs. Kennedy?" said the colonel, stopping to chuckle upon the mat. It seemed such a funny way of inquiring for Rose.

He was taken up stairs solemnly, and put into the drawing room, Rosebud's drawing room. With another chuckle he put up his glass and looked about him. How Rose used to scold at the shabby old drawing room at home, a room that not all her fripperies could brighten!

"When I have a room of my own," she would say, "it will be all pink and pretty. Pink paper and cushions, and little crooked chairs, and Dresden china. Wait!"

This was, however, not the kind of room that the colonel had been led to look for. It was long and dark, with heavy curtains, shutting out the windows and the sun. The wallpaper was of a dark blue pattern, and the mantelpiece was covered with peacocks' feathers. Peacocks' feathers, of which Rose had such dread and horror that she had burned all there were at home!

The colonel walked up and down, lost in astonished contemplation. In his abstraction he knocked over a basket that had a table to itself, and stooped to pick up the contents, reels, scissors, socks, and wool, and a big bunch of keys. These keys looked business-like; they clattered much as the colonel put them back; but he noticed that the basket was old and the lining shabby; it could not belong to Rose. He straightened himself and wondered.

"Papa!"

She came flying up in her old hasty fashion. The door, with its heavy curtains dragging, swung slowly shut behind her.

"How are you getting on?" said the colonel, drawing her to the light and smiling. "Like two little birds in a nest?"

"You have forgotten my mother-in-law," said Rose. Then she buried her face in his coat and cried.

"What? Hey? What?" ejaculated the colonel, helplessly. He had not expected this. Rose lifted her head and smiled, though her mouth still quivered.

"It's all right," she said. "Only I—

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I—was rather lonely, and you did not tell me you were coming—and—and—I am so happy."

She was trying to laugh, but the sound did not ring gayly. The colonel stared at her, patting her head and striving to make it out.

"Come to the other room," said Rose. "It is so dull and dark in here, and those peacocks' feathers send cold shivers down my back. Come into the other room. She is out."

"She?"

"Oh, Mrs. Kennedy," exclaimed Rose, hastily. She took him across the landing into the dining room, the windows of which looked on the street. There was a low chair in one window, a work table and a cat.

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"I sit here with pussy," said Rose. "Then I can watch people go by in the street. And the bank is just opposite. If I look very hard—so," she pressed her small face close to the glass, "I can now and then see the top of Archie's head over the wire blind in the window."

"Is that the way you keep house, lazy person?" said the colonel, patting the hand that lay in his own. "I thought I would find my Rosebud buzzing up and down like a little bee, trotting to the shops and making wonderful experiments in the kitchen. I was certain you would appear in a big white apron, clattering your keys."

"I would like that," said Rose. Her tone was woeful. "But Mrs. Kennedy manages. There—there is nothing for me to do."

She sighed, and then jumping up, began to talk fast and nervously. There was a step on the stair, and along the landing. Somebody looked in.

"My dear Rose, I do think—" The voice was unpleasant. It was, however, altered as soon as the colonel was observed. Mrs. Kennedy came in smiling and shook hands.

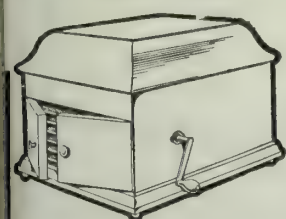
The colonel would stay to lunch, of course? and to dinner? She must just go down and speak to the cook.

"You ought to do that, Rosebud," said the colonel, pulling at his moustache. "I shall speak to Archie." But Rose gave a little nervous laugh.

"Don't, papa; oh, don't! It would make such mischief; and she would hate me—and I am awfully frightened of the cook."

* * * * *

"Poor little creature. I am so sorry for her."



In The Evening

The family is in the living room—everybody tired of reading and talking. No one feels like playing the piano. A bored listless silence fills the room. One by one they give up and go to bed.

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"I know old Mrs. Kennedy makes her life a burden."

"Should not somebody speak to Archie Kennedy?"

"It wouldn't do any good. It isn't as if the old wretch had any money. She has got to live with them, and I suppose that is why Mrs. Archie puts up with her so sweetly. It can't be helped."

"Poor Mrs. Archie! The old lady's constant nagging must be enough to drive her mad. Did you see how ill she looked?"

The colonel heard bits of that conversation, for he was sitting behind the talkers' parasols. It sank into his mind along with his own conviction and Rose's anxious little face.

"Promise that you won't be putting things into Archie's head," she had once said, when the colonel had come in and found her crumpled in a little heap on the sofa, sobbing.

"I was feeling a little low, that's all—and I would never forgive you. Promise, promise," and she would not let him go until he gave in.

Rose was a plucky little soul, as she should be, being a soldier's daughter. She would not complain or tell tales, and if she did not show fight it was for Archie's sake. But the colonel grew to recognize a little patient droop of her mouth—a droop that she curved up into a smile if Archie came in. This was the Rosebud whose life should have been all summer, who ought to have been the happiest little wife in the countryside.

The colonel pulled at his gray moustache, and his eyes were troubled. People talked of it, did they? What did they say?

"If only the horrid thing would go and get married and leave those two in peace."

"Married? Old Mrs. Kennedy?"

"My dear, she would be only too delighted. You can see it in the twinkle of her eye. And it would be a mercy."

* * * "Hum!" and the colonel was thinking hard. There was one way out of it. The lines grew deeper across his brow. Those parasols were fluttering with many other parasols and the talk was of other matters. The colonel was driving home and thinking. Light words lightly spoken are not always lightly heard.

The sun went down. A faint mist rose over the soft place in the moors and the daisies were all asleep. As to the horse, he was going as he liked, and he stopped at the stable gate. The colonel walked up to the house he had lived in for many years. The flowers the gardener sowed grew in the borders stiffly; but a rose tree that had been planted long ago had grown all over the wide front wall, unclipped, untied—it had been planted by Rosebud's mother.

There was a dog in the lobby. It was an old campaigner like its master, in its own line, and had probably had a great deal to do with the getting of the many trophies that hung on the walls. "Grinning dead things," as Rose had called them; but she had been early familiar with them, and did not scream at wolves' heads and tigers' jaws.

The look of the house was shabby. The rugs were worn, and the papers faded. It had the air of a man's house, very comfortable to a man, but a blot in the eyes of a woman.

"Hum," said the colonel, stopping at the stair-foot and looking round. The dog sniffed at his heels and followed. There was one room upstairs that

was unlike all others. The colonel turned the door handle softly, as if he were on the threshold of some holy place; as if the faint, faded scent of roses was not to be lightly breathed. There was a strange silence there—a silence that did not seem like the mere quiet of an empty room.

"Marguerite," said the colonel.

He was speaking to somebody who could give no answer, but his voice was anxious.

"Marguerite, you will not be angry? It is for our little one, our only girl. For her sake alone, my dearest."

Then he turned and came out again. His face was darkened with resolution, and a decision that had been hard.

Mrs. Kennedy and her daughter-in-law sat at the window. Rosebud was gazing across to the bank, with her hands clasped idly in her lap. The droop in her mouth was very plain. Mrs. Kennedy, for her part, was glancing up and down the street, observing her acquaintances, the shops they went into, and the clothes they had on. Her sharp eyes traveled up and down, and her tongue was busy.

"There is that Lorrimer girl. Shocking style! Do you see her hat? I wonder how you can make a friend of such a person. I really wonder. Rose— * * * Oh, she is speaking to Dr. Smith. He has plenty of time to talk in the street, you see. I cannot understand your preferring him. I have always had Dr. Nivison—"

"Yes," wearily, from Rose.

"Ah, now, do you notice how badly Miss Hallam walks? And you admire her? I can't agree with your taste. Look how awkwardly she crosses the street—she is standing on one leg outside Bailey's!—There are the Mariman's your friends. Positively— Oh, who is that odd person with a bouquet? Good gracious, can it be your papa?"

Rose looked up the street. Yes, it was the colonel, marching stoutly along, with a great bunch of flowers.

"How funny! But my dear, pray don't rush down stairs like that. The servants—"

She only spoke to the tail of Rose's gown, for the girl was flying down to pull back the latch herself.

"Oh, the flowers! How dear and sweet of you," she cried. The colonel laughed in an embarrassed manner, but kept hold of his bouquet until they had come upstairs.

"They are for Mrs. Kennedy, if she cares to accept them," he said, solemnly.

Rosebud gasped.

"You are quite gallant, colonel," said the mother-in-law, sniffing at the bouquet. There was a sudden sprightliness in her tone, and her look was arch. Rose thought she had grown younger.

"Was it a joke, papa?" she said, half reproachfully, while Mrs. Kennedy retired to put the bouquet in water. But the colonel shook his grizzled head.

"A joke? My dear child, why should you think so?" he answered stoutly.

* * * * *

It was not long after this that Rosebud, venturing into her mother-in-law's room to ask her something, found her at her toilet table. She was sitting in front of the glass and smiling; there was a powder-puff in her hand and one cheek was a brilliant pink.

(To be continued.)



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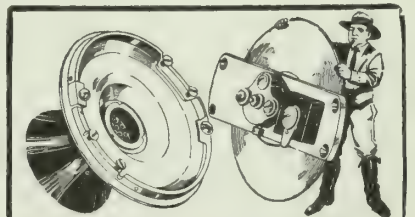
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Home Economics.

"What Shall We Eat?"

"What shall we have for dinner?"

The University of California is going to help the mothers of the State to answer that question. Correspondence courses in domestic science are now about to begin. They will be in charge of Miss Marguerite Cooley, a woman trained professionally at Columbia.

One course will deal with the selection and use of food in the home. The classification, composition and nutritive value of food materials will be taught, with consideration of the cost of various foods, so that menus may be prepared in which the different nutritive elements needed may be represented and yet economy be observed.

The cookstove and the kitchen will be the laboratory equipment required for the correspondence course in the "Principles of Cooking." In this course will be taught the relation of different methods of cooking to the appetizingness and the digestibility of foods.

"Feeding the Family" will be the subject of a third correspondence course. In this students will be taught how children should be fed, what sort of fuel the growing boy needs for his internal furnace if he is to get along well at school, play good baseball, and do his farm or garden chores energetically and efficiently. Some of the prime elements of having a contented husband will be taught in this course, and also what is fact and what is fancy in the feeding of the sick and the convalescent, and what is fact and what is fancy in diets for the healthy as well as for the sick. This course on the "Feeding of the Family" is intended to be taken only after the completion of the course on "Selection and Use of Food in the Home."

These same subjects are now being taught to the women students at Berkeley, as well as how to discriminate in the choice of fabrics, and the principles of beauty as applied to dress and to the furnishings of the home. Household economics, the planning of family budgets, and the wise use of income are also being taught to the women students at Berkeley. It is hoped later on to have correspondence courses on these subjects too.

Garden Notes.

There should be a good vegetable garden on every farm. Surely the average farmer cannot afford to buy his vegetables when he has so much land ready to be worked. He will find that in dollars and cents the vegetable garden is among the best paying parts of the farm. The younger members of the family can help a great deal, and instead of the hard-working farmer's wife being worried as to the variety of food for the next meal, she will be able to put on the table quite an assortment of vegetables if there is a good vegetable garden.

There are quite a number of vegetables that are not grown very largely commercially that should find a place in the home garden; for instance, Swiss chard, kohlrabi, Scotch kale for winter use, peppers for fall use, eggplants, sprouts, etc. All of these are readily grown, and once grown will always be wanted.

Slugs are always more or less of a nuisance in the home garden. The poison bran mash for cutworms is a good remedy, or cabbage leaves can be dipped in dripping fat to which is added one teaspoonful of lead arsenate, and scattered about the garden. Sacks, boards, etc., are hiding places for these slugs, where they may be trapped and destroyed.

Cutworms are best got rid of by using a small amount around each plant or broadcasting over the garden the following: bran, 16 lbs.; paris green, $\frac{1}{2}$ lb.; salt, $\frac{1}{4}$ lb.; syrup, 1 quart; and a little warm water to make a crumbly mash.

Good Recipes.

COLD LEMON PUDDING.—Required: 2 oranges, 2 lemons, 2 ozs. of sugar, 4 sponge-cakes, blanched almonds, 1 pint of thick custard. Squeeze the lemons and oranges, adding the juice to half a pint of cold water and the sugar. Place the sponge-cakes in a dish, soak with the juice, and stick with blanched almonds, cut in strips. Then cover with whipped cream or a thick custard.

OATMEAL GRIDDLE CAKES.—Use the oatmeal left from breakfast for griddle cakes. One cup of oatmeal mixed with $1\frac{1}{2}$ cups of milk. Stir briskly until all the lumps are out of the meal. Add the beaten egg, 1 cup of graham flour, and 1 teaspoonful of baking powder. Stir the baking powder into the flour before using. Bake on hot greased griddle.

BEEF OLIVES.—Cut some thin slices of cold beef, lay them on a board, and spread a thin slice of bacon over each, and then a little of the following mixture: One teaspoonful of chopped onion, 1 teaspoonful of chopped parsley, 1 teaspoonful of mixed herbs, $\frac{1}{2}$ teacupful of bread crumbs. Moisten with a little egg; pepper and salt. Roll up tightly and lay them in a saucepan, and cover with hot water; simmer for one hour, thicken the gravy with a little corn flour, and serve.

SUGARED ORANGE PEEL.—Cut the orange peel 2 or 3 inches long and less than $\frac{1}{2}$ inch wide, cover with water and let stand until the third day, changing the water. Place over a hot fire and when it boils up put back where it will simmer only. Cook in this way for three hours or until the syrup is thick enough for candy. Turn into a strainer, let the syrup drain off and then lay on a platter. Now stir into it all the granulated sugar it will absorb. It should be so dry that it will not soil the hands, yet perfectly soft.

Hours of Sleep.

Here are the prescribed hours of sleep as suited to age:

	Hours.
At 4 months	20
At 6 months	18
At 1 year	15
At 2 years	15
At 4 years	13
At 7 years	12
At 9 years	10 $\frac{1}{2}$
At 14 years	10

If parents would only enforce this rule we should have stronger bodies and better brains. Too much excitement and powerful artificial light with too little sleep causes 70 per cent of all nervous disorders.—Modern Priscilla.



"The beverage for every age"

Ghirardelli's Ground Chocolate

Have you ever known a child who didn't smile with delight at the very mention of Ghirardelli's Ground Chocolate? Have you ever seen a child refuse a second cup?

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San Francisco

Since 1852

Try this food drink. Send for sample can. KNOW what a delightful beverage it is.

How It Started.

Nebuchadnezzar was lunching in his accustomed style.

"All flesh being grass," he reflected, "this must be beef a la mowed."

And, chuckling hoarsely, he took another chaw.—Puck.

So She Said Nothing.

"Why didn't you tell the young man to stop kissing you?" said the irate father.

"Well, you see, papa, he's fearfully deaf and I was afraid somebody would hear me!"—Yonkers Statesman.

Hard to Suit.

The warden was sympathetic.

"If you wish," he said to the new convict, "you may choose your own occupation while here."

No. 777 grinned.

"I ain't particular," he replied, "as long as it's some outside work."—Youngstown Telegram.

"How did you list the money that fortune-teller got from you?"

"I put it under the head of prophet and lost."—Baltimore American.

Miss Chance—Edith has lovely hair. Why, she can sit on it.

Miss Nomer—She's very careless to leave it lying around on chairs.—Ex.

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TERRACE, DITCH, TILE DRAIN, IRRIGATE your land properly, and save surveyor's fees. It is sold by up-to-date hardware and general merchants everywhere, and guaranteed to be the most

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Our Young Folks

The Discoverers.

The day Jack and Hal reached grandfather's house in the country, the first thing they did was to say, "How d'you do?" to every living thing on the farm. Then they sat down and took off their stockings and shoes, for going barefoot was one of their summer delights.

After dinner they set out on a voyage of discovery. They were hardly outside the woodshed door when they discovered the old corn-crib. They knew what it was, for it had stood there ever since they could remember; but they never had paid any particular attention to it before. It was a little, one-story, one-room building, as far from the house as it was from the barn, and that was just as far as the house and barn were from each other. The three buildings made the points of a triangle.

"It stands up like a cat, on 'four legs, one in each corner,'" said Jack, looking at the posts under the crib. By bending over, the boys could walk about in the space between the posts. They played it was a cave.

"But why is it on legs, and what's a big old tin pan upside down on top of each leg for?" asked Hal. "Are they for us to drum on?"

"I don't know," said Jack, "but anyway we can drum on the pans."

Their drumming made Jack think of "The Pied Piper of Hamelin," and that made him think of rats. "I know why the corn-crib is set on posts and what the pans are on the top of the posts for," he said. "They are so the rats and mice can't get in and carry off the corn."

The sides of the crib were narrow, slat-like boards, with a little space running all around the crib between each row of boards.

"What are those cracks for?" asked Hal. "Are they so we can climb up the walls?"

"I don't know," Jack answered, "but anyway we can climb by the cracks."

Jack boosted Hal until he could get his fingers and toes between the boards, and then they climbed up the sides to the roof. While they were climbing, they could feel the wind blowing through the cracks on their fingers and toes and on their faces.

"I know what the cracks are for," said Jack. "They are to let the wind blow through the crib to dry the corn."

The roof was pitched and shingled. It was not very steep. At the front end of the ridgepole was fastened a tall stick, taller than a man.

"What do you suppose that is for?" asked Hal. "Is it a mast to our ship?"

"I don't know," Jack said, "but I guess we can swim up to it."

"O Jack, I know what it is!" Hal cried. "It is the South Pole!"

"Sure enough! We have discovered it over again. We shall be the next after Amundsen to reach it," shouted Jack.

"We haven't any dogs," said Hal, doubtfully.

The boys looked about them. Long after the roof was shingled the ridgepole had been mended by having a narrow board nailed on each side of it. To reach the ridgepole, Uncle Harry had nailed a row of little strips of wood, like the rounds of a lad-

der, right up the middle of the roof. These steps were still in place.

"You can go first, and I will steer your feet," Jack said generously. "But we shall not slip on the icebergs, because our feet are bare."

"Never mind if I do go first, we will share the glory," Hal answered. "I should freeze and starve if it were not for you. The ice is very cold."

They climbed carefully, and soon reached the ridgepole. They got astride it and swam along until they reached the South Pole. It was an exciting voyage.

"I see a whale!" cried Hal, when a calf came out from a cowshed into the barnyard.

"And there are some reindeer—don't startle them," whispered Jack, when they caught sight of a flock of sheep in the pasture.

When they reached the pole, they could see Uncle Edward's farm on Maple Hill, more than a mile away. The buildings looked very small, but from one they could see a red flag flying.

"The red flag means, 'Come over here tomorrow,'" said Jack.

"Uncle Harry said they would fly a red flag if we were to go. That is what this stick is for. It is Uncle Harry's flagpole."

Just then Uncle Harry came out of the house, carrying the stars and stripes. He was going to fly them to say, "Yes, we will come."

The brave discoverers were very glad to have Uncle Harry's help in getting back to civilization. He had cached some stores—ginger cookies—in his coat pockets. The boys ate them all before they left the pole.

"Well, I declare," said Uncle Harry, when they explained their adventures and their scientific observations to him, "the greatest discoverers are always those who first of all find interesting things right in their own back yard."—Fannie W. Brown.

Harold, five years old, was intrusted with the duty of carrying some milk to his grandmother produced from the home dairy herd consisting of one cow. "I hope," said grandma, "that you are not bringing me all you have." "Oh, no," said Harold, "we got a whole cow full at home."

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4000 TEXAS UMBRELLAS, all grades to twelve feet, straight stemmed and branched.

8000 YEARLING APPLES, 4 to 6 and 6 to 8 feet. Absolutely free from aphids and gilt edge in every particular. Spitzenberg, N. Y. Pippin, Yel. Bellflower, Baldwin, Winesap, Rome Beauty, Wagener, Ben Davis, Red Astrachan, White Astrachan, Gravenstein, Alexander.

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Fine 168-acre mountain ranch, good alfalfa land; about 100 acres can be plowed and irrigated; good water right from river running through the place; several good springs, one valuable sulphur spring; large orchard of apples and mixed fruits, nuts, grapes, berries, and fine potato land; ready sale at good prices for everything raised; fine scenery; an ideal summer resort; small store would pay fine; nearly new seven room house, large barn, chicken houses, and price \$6,000, \$3,500 cash, balance \$500 a year; no trades. W. WALLACE BALDY, Mist, Madera County, Cal.

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WANTED.

WANTED—Assistant superintendent for large ranch. Only man of wide California farming experience, familiar with handling grain and alfalfa on thousands of acres need apply. Apply by letter only, giving detailed experience, references, etc., to 1314 Merchants Exchange, San Francisco.

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THE MARKETS

San Francisco, Feb. 18, 1914.

Cereals.

WHEAT.

No further price changes are noted at present, but the recent advance is firmly held. The local market is quiet, as buyers do not care to acquire large stocks prior to March 1, and arrivals from the north have decreased. Efforts in the north are being made to get additional Oriental business.

California Club, cttl...	\$1.60	@1.62½
Forty-fold	1.62½	@1.65
Northern Club	1.60	@1.62½
Northern Bluestem ...	1.70	@1.75
Northern Red	1.60	@1.70

BARLEY.

The local barley market continues about as before, with business quieter, if anything, than last week. Prices still tend downward, both grades of feed being lower.

Brewing and Shipping.	Nominal
Choice Feed, per cttl...	\$1.10 @1.15
Common Feed	1.05 @1.10

OATS.

Prices stand about the same as last week, but the market is weak on all grades, and with practically no demand some decline is expected.

Red Feed	\$1.50 @1.60
Seed	2.00 @2.10
Gray	Nominal
White	1.35 @1.40
Black Seed	Nominal

CORN.

Values are unchanged, but the local market is very dull, with no demand worth mentioning and only moderate offerings.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @1.82½
Eastern White	Nominal
Egyptian	1.75 @1.85
Milo Maize	1.75 @1.80

RYE.

This grain is little more than nominal in value at present, as there is hardly any movement. Offerings, however, are held at about the range last quoted.

Rye, per cttl.....	\$1.45 @1.50
Seed	1.65 @1.75

BEANS.

There is nothing new in prices this week, and the general situation remains about as last reported. Everything on the list is firmly held, and there is a fair movement for this time of year, though buyers are not disposed to operate on a large scale at the present prices. Most varieties are well out of growers' hands, and in view of this, the prices on wharf are largely nominal. Dealers' stocks are light for this time of year, although so far there is enough to meet all requirements.

(On wharf.)

Bayos, per cttl.....	\$5.15 @5.25
Blackeyes	4.25 @4.35
Cranberry Beans	4.00 @4.25
Horse Beans	1.90 @2.15
Small Whites	4.75 @5.00
Large Whites	3.50 @3.60
Limas	5.10 @5.20
Pea	Nominal
Pink	3.00 @3.25
Red Kidneys	5.00 @5.15
Mexican Red	4.00 @4.15

SEEDS.

There is now a fair movement under way in several lines, though the demand is nothing unusual. Values remain as for some time past.

Alfalfa	12½ @15 c
Broomcorn seed, per ton...	Nominal
Brown Mustard, per lb....	3¾ c
Canary	7 @ 7½ c
Hemp	2¼ @ 3 c
Millet	2¼ @ 2¾ c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Flour remains firm at the recent advance, and there is a fair movement in the interior, though many buyers filled their nearby requirements at the old prices.

Cal. Family Extras ...	\$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

Arrivals continue to increase, with increasing evidence of an effort to sell on the part of holders in the country. Considerable quantities are being sent in on consignment, and this has naturally caused a very weak feeling in the market. The requirements of local consumers are not heavy, and as they are buying only from hand to mouth it is very difficult to dispose of the current arrivals even at the low prices now quoted. The weakness is especially apparent in the lower grades. In view of crop conditions, dealers express the opinion that prices will be still lower. Supplies in the country are not decreasing very fast, as the country demand is unusually light.

No. 1 Wheat, or Wheat and Oats	\$13.50 @14.50
do No. 2	11.00 @13.00
Lower grades	9.00 @11.00
Tame Oats	11.00 @15.00
Wild Oats	9.00 @12.00
Alfalfa	8.00 @12.00
Stock Hay	7.00 @ 9.00
Straw, per bale.....	65 @ 90c

FEEDSTUFFS.

This market continues dull and easy for practically all lines of feed, though there are few changes in values to report this week. Rolled barley is a little lower, following the drop in the whole grain, and oats show a downward tendency.

Alfalfa Meal, per ton....	\$18.00 @19.00
Bran, per ton	24.00 @25.00
Oilcake Meal	34.00 @35.00
Cocoanut Cake or Meal..	25.00 @26.00
Cracked Corn	41.00 @42.00
Middlings	33.00 @34.00
Rolled Barley	24.50 @25.50
Rolled Oats	30.00 @31.00
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

The principal feature of the week is the first large arrival of asparagus, which has brought the price down considerably, though the offerings have found a good demand. Asparagus is being shipped East from the river district, and is expected to find a strong demand. The first green onions have also appeared, selling around \$1 per box. First-class celery is scarce, and fancy lots bring a premium over the quotations, while rhubarb is moving freely at the old prices. Fancy lettuce is considerably higher. Mexican tomatoes are lower, with fairly large supplies, and southern peas show a slight decline, while green peppers are higher. Mushrooms are a little easier, though offerings are not very heavy at the moment.

Cabbage, per cttl.....	\$1.00 @ 1.25
Cauliflower, dozen	25 @ 50c
Green Peppers, lb.....	4 @ 5c
Carrots, per sack	40 @ 50c
Green Peas, Southern, lb.	5 @ 9c
Tomatoes, Mexican, box..	1.75 @ 2.25
Eggplant, lb.	3 @ 6c
Sprouts, lb.	4 @ 6c
Celery, large, crate.....	1.25 @ 1.75
Rhubarb, box	1.25 @ 2.00
Lettuce, crate	75c @ 1.75
Mushrooms, lb.	10 @ 12½
Asparagus, lb.	25 @ 40c

POTATOES, ONIONS, ETC.

Several lots of new potatoes have appeared this week, and find ready sale at the prices quoted below. Old river stock is a little lower, but Oregon potatoes are well maintained. Sweeties have advanced. Some of the Australian onions are offered at a slight concession, but local stock stands about as before, and the Oregon market is firm.

Potatoes:	
River Whites	90c @ \$1.75
Sweet Potatoes, per cttl...	1.25 @ 1.60
Oregon Burbanks	1.00 @ 1.25
Onions: Yellow River, cttl.	2.50 @ 2.75
Oregon	3.25 @ 3.40
Australian	3.75 @ 4.00
Garlic, per lb.....	7 @ 10c
New Potatoes, lb.....	3 @ 5c

Dairy Produce.

POULTRY.

Eastern stock is coming in rather slowly, and prices for chickens are pretty well maintained. Local stock

is cleaning up readily, and good young chickens bring the top figures without difficulty. The demand for turkeys is light, and prices have been slightly reduced.

Large Broilers	23 @24 c
Small Broilers, per lb....	26 @27½c
Fryers, per lb.....	20 @22 c
Hens, extra, per lb.....	18 @19 c
Hens, large, per lb.....	18 @19 c
Small Hens, per lb.....	17 @18 c
Young Roosters, per lb..	18 @20 c
Squabs, per doz.....	\$ 2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @21 c
do dressed, choice....	23 @25 c

BUTTER.

Prices are on a lower level than last week, but have been held rather steadily for the last few days, current offerings being fairly well taken care of by the local demand. There is practically no shipping business, which is usually relied on to keep this market clear of a surplus.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extras	26½ 26½ 26½ 26 26½
Firsts	25 25 25 25 25

EGGS.

The downward movement of prices, though less abrupt than last week, still continues, the drop amounting to 2½c. There is no shipping demand, both northern and southern markets being well supplied with Eastern and Chinese eggs, while production at nearby points continues to increase. The price, however, is still higher than last year.

Thurs. Fri. Sat. Mon. Tu. Wed.	
Extras	24 23½ 24 22 21½
Selected	
Pullets.....	23 23 22 19 19

CHEESE.

Flats and Y. A.'s remain steady at last week's prices, but Monterey cheese is coming in more freely, and is weak at lower prices.

Fancy California Flats, per lb...	19 c
New Young Americas, fancy....	20 c
Monterey Cheese	16 @18 c

Deciduous Fruits.

Supplies of California apples in cold storage are running rather low, and most varieties have been cleaned up, though Newtowns are still moving well at last week's prices. Oregon stock is firm, but there has so far been sufficient stock for all current needs.

Apples: Newtown Pippins..	\$ 1.50 @2.00
Hoover	1.00 @ 1.50
Oregon Spitzenbergs ..	1.40 @ 2.25
Oregon Ben Davis.....	1.65 @ 1.85

Dried Fruits.

There is not much new to report in this market, the general situation remaining about the same as for some time past. The market shows considerable firmness all around, owing to the scarcity of supplies in nearly all lines. Prunes are especially firm, according to some reports being stronger than ever at this time of year, and while packers have not raised their quoted offers, growers who have anything left should be able to clean up at high prices as stocks in the trade are exhausted. The entire stock is said to be not over 3000 tons, mainly 80's and smaller, while Santa Claras are about cleaned out. There has been some foreign business lately, and a steady demand is noted in the East. Apples are closely cleaned up. The supply of peaches has been considerably reduced lately, and stocks in the East are getting into very small compass, with indications of a better demand during the spring. Raisins are firm, but quiet. The New York Journal of Commerce says: "There is a firm feeling in most California products, based on the statistical situation, and notably in seeded raisins, the supply of which in outside hands is getting into very small compass. However, some sellers are reported to be still cutting the Associated prices on fancy and choice seeded a little, but they are said to have few goods left unsold. On the spot here the movement is seasonably slow and prices are nominal. "While the demand for California prunes is not active, a steady business

is being done in lots of 25 to 100 boxes to cover needs of consumption. The fact that the orders come from so many points in the interior is taken as an indication that distributors are unusually lightly supplied. Late Coast advices state that many small orders from distributing markets are being received, though New York, Philadelphia, Boston and Chicago are sending in few, if any, inquiries.

"Peaches are getting fair attention in a jobbing way, and, as spot stocks are light, while the trend of prices on the Coast is upward, the market here has at least a steady tone. Apricots are in moderate demand. Supplies here are small, and holdings on the Coast are light. Consequently the market is firm, but prices show no quotable improvement."

Evap. Apples, 1913	6½ @ 8 c
Apricots, 1913	10 @13 c
Figs: White	Nominal
Black	Nominal
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanias	4½c

Citrus Fruits.

The Eastern orange market is still low, which was partly accounted for by the intensely cold weather that prevailed there last week. At New York on Monday, February 16, the auctions averaged from \$1.55 up to \$2.35 per box. These prices were paid for 45 cars of navels. Most of the other auction points showed about the same prices paid that day. Lemons are holding their own well, prices ranging from \$3 to \$4 per box.

The dry weather of the past three weeks has allowed the shippers to get plenty of fruit, and the result has been from 200 cars up of oranges sent East daily. As the season progresses the crop is proving to be heavier than anticipated, the estimates now placing the number of oranges and lemons to be marketed this year at over 46,000 cars. To get this vast output to market will necessitate fast work by the shippers and the straining of every possible prospect to secure profitable returns.

Navel oranges are moving well in the San Francisco market at the old prices, while tangerines are somewhat higher. Fancy lemons have been shaded, and this fruit finds only a limited demand at the moment.

Oranges: Navels	75c @ \$2.00
Tangerines, crate	1.00 @ 1.50
Grapefruit, seedless	1.25 @ 2.50
Lemons	1.75 @ 3.25
Limes	5.50 @ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Reports from the southern walnut associations indicate that there is still some stock of the inferior qualities on hand, but with little stock available from other sources, it is expected that everything will be cleaned up in the near future. Almonds are out of the market except in a small jobbing way, and the present quotations are only nominal.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15½c
Langueodoc	15½c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

No change has occurred in the local market for some time, as there is very little demand, while the absence of large offerings in primary markets prevents any marked weakness as to prices.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½ @ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Supplies are light and prices are

held steadily up to the old level, although there is no urgent demand in this market.

Light 30 @31 c
Dark 28 @29 c

HOPS.

Considerable business has been done in the north of late, but nearby markets are rather quiet at the moment. It is reported that there is practically nothing unsold except on the Pacific Coast, but buyers have so far shown no disposition to advance prices.

1913 crop 18½ @21 c
1914 crop 14 @16 c

Live Stock.

Calves, lambs, and sheep are rather scarce, and hogs are coming in rather slowly, though there has been no advance in the last fortnight. A slightly easier feeling is reported as to cattle, with fairly large supplies available at the moment.

Steers: No. 1 7¼ @ 7½ c
No. 2 7 @ 7¼ c
Cows and Heifers: No. 1 6¼ @ 6½ c
No. 2 5¾ @ 6 c
Bulls and Stags 2½ @ 5 c
Calves: Light 8¼ @ 8½ c
Medium 8 @ 8¼ c
Heavy 6½ @ 7½ c
Hogs: Grain-fed, heavy...7¾ @ 8 c
150 to 250 lbs. 8½ @ 8¾ c
100 to 150 lbs. 8¼ @ 8½ c
Prime Wethers 5½ @ 5¾ c
Ewes 4½ @ 5 c
Lambs 6½ @ 7 c

DRESSED MEATS.

Steers 12 @12½ c
Heifers 11½ @12 c
Veal, large 12 @13 c
Small 13½ @14½ c
Mutton: Wethers 11 @11½ c
Ewes 10 @10½ c
Suckling Lambs 13 @13½ c
Dressed Hogs 13½ @14 c
Colts 25 @ 50c
Dry 75 @ 2.00

HIDES.

The demand is limited, but with light supplies the market retains all the former strength, and in some cases sellers have asked an advance.

Heavy Steers, over 56 lbs 15 c
Medium 14½ c
Light Steers, under 48 lbs 14½ c
Heavy Cows, over 50 lbs. 14½ c
Light Cows, 30 to 50 lbs. 13½ @14½ c
Kip 14½ @15½ c
Veal 17½ @18½ c
Calf 17½ @18½ c
Dry—
Dry Hides 25½ @26½ c
Dry Kip, 10 to 15 24½ @25½ c
Dry Veal, 5 to 10 29½ c
Dry Calf, 7 down 29½ c

Horse Hides—
Salt: Large\$2.75
Medium 2.25
Small 1.00

WOOL.

The northern market is rather active for this season, with prices tending upward. California wools, however, are not yet getting any attention, and it will probably be several weeks be-

fore local business picks up.

Northern mountain 7 @ 9 c
Southern mountain 7 @ 8 c
Defective 4 @ 6 c
Lambs 7 @10 c

HORSES.

The past week's sales have brought out the first sign of really active buying this season, but from the marked increase of interest, both on the part of local and country buyers, it would seem that there will be a much better demand from now on. Better prices have been realized than for some time past, and quotations in some lines have been marked up. The more favorable conditions have caused some increase of shipments to this market, but it is believed that little difficulty will be encountered in effecting sales.

Heavy drafters, 1700 lbs. and over\$275 @325
Light Drafters, 1500 to 1650. 225 @250
Chunks, 1350 to 1500 200 @225
Wagon Horses, 1250 to 1350. 150 @200
Delivery Horses, 1050 to 1250 100 @125
Desirable Farm Mares 75 @100

MULES.

1200 lbs.\$200 @250
1100 lbs. 150 @200
1000 lbs. 125 @175
900 lbs. 75 @125

PUBLISHER'S DEPARTMENT.

This issue of the PACIFIC RURAL PRESS contains several very valuable articles which will interest our readers. The first page article on alfalfa, by the editor, contains new facts and shows the importance of this food plant. The editor also answers a prune inquiry in a way calculated to put Eastern writers right upon an important fruit product of California. During the trip south by our stock writer, Mr. Loomis visited many stock and dairy ranches, and one of these is written up in this issue. Mr. Loomis tells how big things are done in a big way on this ranch in San Benito county. A good silo article by W. D. Guthrie is also worth careful reading. Mr. Guthrie knows the dairy game and is in the field every day for this paper. Commencing with this week, we will have special articles from our new writer, R. E. Hodges, who is to be on our staff. Mr. Hodges came from the University of Wisconsin to this State nearly two years ago and since that time has done a lot of traveling to familiarize himself with conditions here. From now on we expect to print articles each week from his pen.

ONE THOUSAND QUESTIONS RECEIVE ANSWERS.

There was issued recently by the Pacific Rural Press a handy volume bearing the inspiring and quite suggestive title, "One Thousand Questions in California Agriculture Answered." If the 250-page book were but a haphazard compilation of quiz and reply, then E. J. Wickson, professor of horticulture in the University of California, editor of the Pacific Rural Press, and author of "California Fruits and How to Grow Them" and "California Vegetables in Garden and Field," would not have accomplished much for the earnest inquirer for friendly advice in the California field of agricultural endeavor and study. Professor Wickson, realizing the value of time to one who looks for tips in agriculture, has furnished his work with a comprehensive and helpful index, in which the details of the work are described under the following headings, each of these headings being arranged in alphabetical order independently of the other headings: fruit growing, vegetable growing, grain and forage crops, soils, fertilizing and irrigation; live stock and dairy, feeding farm animals, poultry keeping, pests and diseases of plants.

The questions in the book were actually sent to the Pacific Rural Press for reply, and the answers were actually published in the Pacific Rural Press, so, while the questions and answers do not cover the entire field of agriculture, they are on vital points and will be of interest and practical value to the agriculturist. Sold by Pacific Rural Press, San Francisco; price \$1.50 a volume.—Fairfield Enterprise.

New potatoes were reported from Alameda county February 6. With 300,000 bags of California potatoes available and an estimated consumption of a million bags before new potatoes become cheap, a great many will be imported from Nevada and Idaho. River potatoes are netting the growers \$1.10 to \$1.25 per sack.

The State Reclamation Board requests the following announcement: "The matter of the alleged diversion of the waters of the Kings river into the San Joaquin river has been specially set for hearing before the State Reclamation Board at its meeting to be held on February 24, 1914, in Sacramento."

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Squirrels

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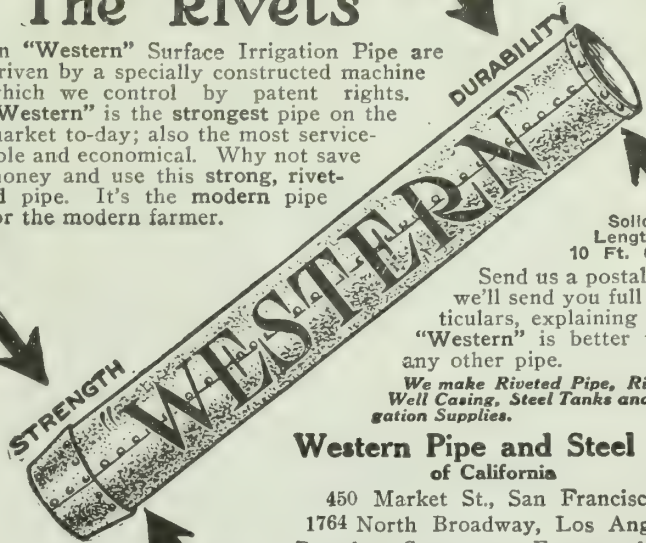
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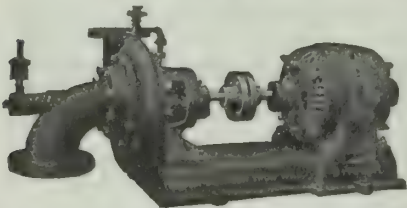
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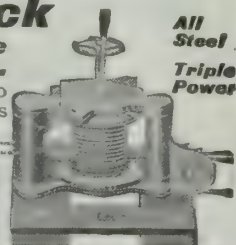
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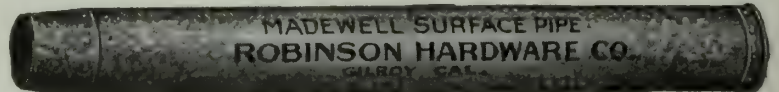
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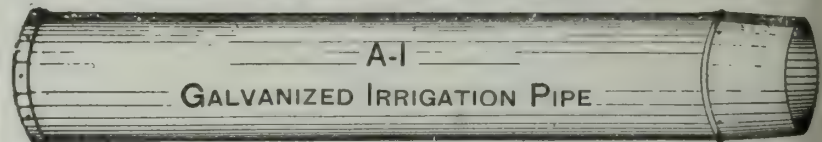
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BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).

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San Francisco

THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 9.

SAN FRANCISCO, SATURDAY, FEBRUARY 28, 1914.

Forty-F

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1914

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Promising Co-operative Cannery.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

The Placer County Growers' Canning Association, composed of over a hundred fruit growers and half a hundred Placer business men will begin operations in its plant at Lincoln when the cling peaches ripen.

This association has special advantages and unusual possibilities for co-operative and financial success. Its members now have bearing peach trees more than enough to supply the cannery to its full

employment for them near home.

Markets for the canned goods will be the least of their troubles. Placer county fruit already has such a national reputation, especially for the superior sugar content of its peaches, that Secretary Ingram already has many letters from Eastern and Southwestern United States asking for a chance to handle the association product under the buyer's labels. Should American markets ever get slack, Vice-President L. J. Kinney believes that England will take all they can put out via Panama canal. No advertising has been necessary.

The stockholders and directors are united on the policy of putting up only a fancy pack. To insure this, they have only a few



Gathering Shipping Plums in the H. E. Butler Orchard Near Penryn.

capacity of 60,000 cases. They live in what Secretary W. D. Ingram calls a "fan district" whose ribs are roads leading largely down hill to Lincoln. It is the great Placer county fruit district, containing nearly two million trees planted primarily for fruit shipment to the East. By far the largest number are peaches, a fruit which has of late years rather unsuccessfully competed with those nearer Eastern markets. A large portion of the peaches are the cling varieties, and these are the ones desired by canners, especially the Phillips and Tuscan clings.

Most of the Placer county plums are shipping varieties not good for canning, but Lincoln's railroad connections place the new co-operative cannery in close touch with the Sacramento river plum and pear orchards and the asparagus fields. And the thousands of acres of undeveloped fruit land near Lincoln awaiting only the water which is assured by the recent completion of the big Lake Spaulding dam, will probably be planted largely to cling peaches and canning varieties of plums, such as the Egg, Golden Drop, Green Gage, etc. With an eye to the future, the association bought ten acres for its plant and arranged all its buildings and machinery so that the capacity may be doubled at short notice and indefinitely expanded as need develops.

Labor is made available by the presence of the families of 400 men employed in the pottery works and by the scarcity of other

days ago selected their manager, after some months of search for a suitable man. They had secured one, but later found that he loves alcohol and they felt they could not entrust their reputation on the first year's pack to him. A drier will probably be added later to care for inferior fruit.

Of the authorized \$100,000 capital, \$52,000 has been subscribed, payable in four annual installments, of which two have been paid since incorporation in December 1912. On this capital, three large cement-floored well-ventilated galvanized-iron buildings have been put up, and the equipment of up-to-date sanitary machinery has been laid down ready for installation by the new manager. It is all operated by electricity, individual motors so far as possible, and two 60-horsepower oil-burning steam boilers will do the cooking. Only one is necessary with the present capacity, but the other may be needed in case of drawing the fires for cleaning the flues, or other causes. The lye-peeling machine will be used only when the hand-peelers are overworked. Two wells will be sunk for pure water.

The stockholders live in the fruit districts of Gold Hill, Hungry Hollow, Mount Pleasant, and Ophir near Lincoln, and Auburn, Newcastle, Penryn, and Loomis on the main line S. P. to the east. L. J. Kinney planted three acres of Tuscan and Wylie clings last winter on his ranch three miles beyond Loomis. From such distances an

(Continued on Page 262.)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

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Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Feb. 24, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	2.80	27.34	30.58	62	41
Red Bluff	5.21	29.61	17.12	58	42
Sacramento..	2.81	18.00	13.61	60	46
S. Francisco..	4.92	26.80	15.89	60	48
San Jose	3.90	11.36	11.36	64	40
Fresno	1.27	6.29	6.29	68	44
Independence	.28	6.18	6.18	56	26
San L. Obispo	3.07	13.49	13.49	69	46
Los Angeles..	7.00	10.60	10.60	70	46
San Diego	1.76	6.88	6.88	66	48

The Week.

Unquestionably the great lesson of the past week's experience is one of greater respect for the teaching of natural phenomena. The California landscape is full of instruction as well as of beauty and inspiration. The great losses which have come to individuals and to municipalities this year have followed lack of respect and provision for the continued operation of great natural forces. We have not had any phenomena in themselves appalling, such, for instance, as the wide agitation of the earth crust, but we have had appalling losses from operation of simple phenomena which we should have foreseen and provided for. In the main, if we mistake not, our troubles have followed, first, intrusion upon the natural provisions for the outflow of storm water, and second, disregard for the gradients at which nature has decreed that hillsides shall stand secure in this State. The first has caused ruinous erosion of farm lands, destruction of roadways, railways, and bridges, the sweeping out of buildings located in natural stream-beds, the flooding of cities, the losses of a few lives and of millions of property. Fortunately, lack of foresight has cost large figures of that which is of less value and can be restored. So far as that goes, the lesson is probably cheap at its cost, if we can all learn wisdom from it. The second group of casualties has largely come from cuts into hillsides without adequate provision for the escape of accumulating water—forcing it to soak in and start slides upon sloping clay or bedrock.

As the sun shines hotly on the waste of sand and gravel of an ill-defined stream-bed, and, as the mountains above are silhouetted against expanses of pearl or topaz, it is easy to forget the cloudburst on the heights and the torrent on the plain—and then Californians are so new and the sun-bleached wash so old—so old that almost a forest-cover of shrubs and trees

manifests its freedom from disturbance for a generation: perhaps, it is merely the waste of a creative period when forces long extinct were in operation! And so we throw up dirt roads across it, and bridge it with a span capable of passing a hundred times as much water as we ever saw flowing on it, and build houses and barns along the new roadway, and even project additions to towns far out upon the idle expanse—with results which are too new in the experiences of some of our readers to need recital.

Let us not forget what we have seen this month. It has lessons for every man, almost, in the handling of his own farming lands: it is eloquent to boards of supervisors not to save money by building short bridges and long approaches; not to lead the public into traps beneath steep cuts on hillsides; not to allow stream beds to be unduly narrowed, but rather to improve and perpetuate the carrying capacity of flood-channels and to give nature the best of every trade they make with her for what she has previously occupied. It seems to us the recent experience in nearly all parts of the State should also receive most serious and expert attention from our State Board of Conservation, and the public be instructed and admonished on the general subject of the relations of natural phenomena to the life and property of the people.

Inland Waterways Work.

Of course, the foregoing phenomena, although usually largely localized in their injuries to people and property, are but a part of the broad question of inland waterways in all their relations. The general convention on that matter, which was reported quite in detail in our issue of January 24th, provided a permanent organization which is now actively at work and is pleading strongly for public interest and support. It has provided for the creation of the following departments: Navigation, Irrigation, Flood Control, Reclamation and Drainage, Water Conservation and Co-ordination, and Water Power. To secure the best co-operation and the widest amount of information possible, that the work may be made fully effective, it was provided that the chairman of each of these departments shall be a member of the executive committee. Others may be appointed outside of the executive committee. It was decided to get as large membership as possible, at \$5 per annum each, so that a great number of persons may support the securing of federal and state appropriations to carry great enterprises. Each county is entitled to ten members and a trustee of the association. The association is, through its executive committee, attending this week a meeting of the Irrigation Districts Association at Bakersfield. We commend the movement to the careful attention of our readers.

Other Streams Needing Regulation.

We hope no one will infer from the preceding exhortations that we have the most headstrong streams in the world in California. "Against this 'flight' from the farm, small measures are as useless as against a raging stream," said Professor Oppenheimer, who is described as one of Germany's most noted political economists. The professor seems almost rattled by the appalling phenomena which his recent investigations have disclosed. "The

history of the world is largely the history of the wandering and movement of the people from the east to the west," says Professor Oppenheimer, "but the wholesale emigration of the last twelve months is almost a psychological phenomenon and finds its causes in the diseased condition of the body politic and the yearning and hope for better conditions. The exodus from Austria has been so great that about five army corps of recruits for the army disappeared within less than a year. The loss of five army corps is a tremendous breach in the defensive strength of any country, especially one as critically situated geographically as Austria." We saw some of that last summer, and we are sure that the professor does not exaggerate the apprehensions of Austrians in that line. "Germany," said Professor Oppenheimer, "more than doubled its population in a short time, but during that same period the agricultural population shrunk over 1,500,000. This condition also prevails in England, Italy, France, Austria, and other countries. The farmer and farm laborer have not only quantitatively but qualitatively decreased to such an extent that it is practically impossible to bring agriculture to a higher state of development." In all these countries the government and the land-holding aristocracies are doing their utmost to stake people on the land, but much as they accomplish, the attractions of social freedom and agricultural opportunity in America are still very powerful. It is hard to convince the people that there is anything at home "just as good." Professor Oppenheimer concludes that "inter-colonization, the breaking up of large land holdings into small farms, and the betterment of conditions are the only measures that will check the tremendous emigration from portions of Europe to the New World."

How Large Should a Farm Be?

Just here is the point where this headstrong stream from Europe will strike traditional American ideas. Will the European farmer be content with a farm which he can jump across, when he reaches this country? If so, perhaps we shall have farm villages of skyscrapers in which farmers are lodged one over the other to save land, as they have in Europe. What, then, is the American farmer's idea of enough land? Well, it crops out now in Arizona, where, on a government reclamation project, Secretary Lane recently ruled that no one should have more than 40 acres. The ruling held that those who have patented 160 acres of land in the Salt River valley shall sell 120 acres and that those who have filed on 160 acres not patented shall relinquish 120 acres. One speaker at a meeting of settlers seemed to voice the sentiment of a great many land-owners when he said that he could live on 40 acres of land, but "not according to the standards of an American citizen."

And there you are. Much as we like Secretary Lane's attitude toward those who are trying to make farms by government-aided irrigation, we do not believe at all in arbitrary reduction of farm holdings to 40 or any other small number of acres. The quarter-section unit is small enough for those who are taming and reducing wild land and forced by lack of local markets and lack of accumulated capital to the less concentrated products. Our notion is that the subdivision of land into what are generally recognized as small parcels must come through evolution of cultures toward the in-

tensive, and you can no more legislate intensive culture into existence than you can solve any other purely economic question that way. The industries which make small holdings rational in some of the most highly developed parts of California cannot be created by fiat. Of course, a colony of those whose chief end in agriculture is to grow their own sustenance and sell small surpluses for taxes and groceries can work on small pieces of land with irrigation and a small acreage of something like fruit, which requires much labor, will do more than that, if well handled, but for field crops, animals, etc., excepting poultry, a small piece of land does not enable a man to establish an enterprise in which he may take pride—and that is what, it seems to us, an American farm should be. Of course, the rule may be 40 acres and subsequent sales may bring the acreage of a man to what is rational under local conditions—and that is an evolution which will in the end laugh at all rules and regulations. But the present issue is whether those who hold the old public land unit shall be forced to subdivide. Their suggestion is that Secretary Lane defer action "until you have an opportunity to personally investigate the conditions existing among us and under which we have made our permanent improvements." And that is certainly a reasonable request.

Is a Farm Only a Grubstake?

This headlong flight of European agricultural aviators which darkens Professor Oppenheimer's sky has been started by the penetration of the American conception of a farm into the skulls of the European peasantry. They are weary of the European conception of a farm as a grubstake: their eyes are agleam with the American conception of a farm as a business enterprise: their dreams are a confusion of dollar-wide acres of acre-wide dollars: their only clear thought is that the American idea gives a man a right to "yearn and to hope," as the professor says. And now what has always been the American conception of a farm—as a grubstake or as a man's business in the world? Certainly it has always been the latter. Of course, the business usually has to be run for grub at first, but what were the old ideals of the outcome? Was it not a piano for the girl; a horse and buggy, fit for courting, for the boy; a heavy silk and a set of furs for the old lady; an old leather wallet stuffed with sharply-shaved notes or shares of bank stock for the old man? Have these old standards ever been abandoned? We trow not: they have merely taken on new forms, but to attempt to follow them would bring us into a maze of straight-fronts, slits, victrolas, tailor-mades, plumes, frock coats, automobiles, bonds, and politics from which we could not extricate ourselves. And yet these are the things which the American farm is rightly expected to produce because it is a business fit to return the rewards of enterprise and investment. It is this conception of it which is now filling our agricultural colleges: it is this view of it which glitters, all too brightly sometimes, in the eyes of great promoters and their clients. It is a conception quite capable of exaggeration and misapplication, but it has, somewhere in the foundation of it, the old American view of the farm and its relations to its owner and to the public. To arbitrarily limit a holding of new land to 40 acres is an attempt to reduce a legitimate business to a grubstake: to encour-

age subdivisions of good land in developed districts to some fraction of forty acres is to mislead the ignorant with the impression that grubstake gardening is American farming. We are speaking in a general way and, of course, exceptions intrude. When, through some fact of environment or association, land will net the owner say \$200 or more per acre per year, rational restriction of acreage may come in, but it will come through the laws of economics, not through legislation or bureau rules. Obviously, such exceptions prove and do not destroy the claim that American farming is true to its ideals when it enables owners to live as Americans ought to live.

Shall Europeans Stay at Home?

Our conviction, from recent observation, is that most of them should do so. We confessed some months ago that our preconception of European countries as overpopulated was an error. We made car-window studies for hours of landscapes in Hungary, Austria, Germany, England, and Ireland which disclosed thousands of unoccupied areas from which the eye would fall now and then upon pent-up farming villages around which the "farms" looked like flower-beds in a large American garden—oases of thrift and activity in deserts of idle acres. Professor Oppenheimer is right: "inter-colonization" within national boundaries will build up those countries and bring prosperity and content to people who have come down from feudal times with their satisfaction in grubstake farming in which the whole family, from tottering grandfather to toddling babe, count themselves successful in the world if what they can do in the field covers their backs and fills their stomachs. They have no conception of American farming as it comes down to us from the pioneers who cleared the forests and subdued the prairies of the older States of this country. Of course, those very pioneers came from Europe, but they came filled with ideas which had no place in European social and industrial life. They came because impelled by forces of mind which they could not restrain nor resist. People thus endowed have been coming ever since, and they will come in the future. They are of incalculable value to the country because they have scope of mind and energy of purpose to cherish the American idea and achieve its ideals. Let Europe make as many of her people comfortable and content at home as she possibly can: America needs only those whom Europe cannot satisfy. America should stop her frantic efforts abroad to secure assisted immigration; let those who cannot resist the individual initiative to come and who are able to make their own way hither and alone receive our godspeed and welcome.

Queries and Replies.

Querists must submit full names and addresses.

Lettuce Heads and Cabbage Heads.

To the Editor: I have been thinking about train boys carrying lettuce. I have a constant thirst for real knowledge and am always anxious to increase my supply. Allow me to ask if you ever actually saw a train boy selling lettuce.—CONSCIENTIOUS READER, San Francisco.

No; we lied about it. We get so tired packing all the other pages of this journal with absolute truth that we often have to lie a little

on the second page just to break the monotony. We fully sympathize with your thirst for truth. We are consumed by it ourselves—that is, most of the time.

Avocado in Sacramento Valley.

To the Editor: I would like to know if the avocado (alligator pear) would thrive in the Sacramento valley, or are the climatic conditions here in winter too severe?—B. C., Sutter.

There are undoubtedly many places in the Sacramento valley which climatically suit the avocado, as they do the citrus fruits. There is, however, great difference in the hardness of the avocado, as described by Mr. Coolidge in the PACIFIC RURAL PRESS of November 15 last. Much depends, then, upon getting the right kind of avocados anywhere in California. Again, avocado trees may grow well and yet not fruit well. This has to be determined by experience. In untried places, the avocado is a good thing to try but not to base much investment upon at present.

Propagation by Cuttings.

To the Editor: Can cuttings from cherry trees be propagated; also olives and apricots?—Reader, Elk Grove.

There are few things which absolutely cannot be grown from cuttings, but some are so uncertain that this method is never resorted to. Cherries and apricots are so much more easily propagated by budding the varieties you desire upon seedlings that no one makes trees from cuttings. Olives grow freely from cuttings.

Resistance of the Tokay.

To the Editor: Are Tokay vines more resistant to phylloxera than other grape vines? My neighbors say they are.—O. T., Martinez.

The Tokay vine usually resists phylloxera longer than other vinifera vines. It does not have very high resistance as compared with resistant vines of the American class, but it is surely to be found surviving and bearing fruit in phylloxerated districts after other vines of its species, which are grown in this state, have succumbed to the insect.

Heading Trees at Planting.

To the Editor: A friend of mine is setting out twenty acres of walnuts, and says he is going to head them two feet from the ground, and by the time they reach maturity the head will be four feet from the ground. Have you found this to be so or would you not rather head them at four feet to begin with? This being a country of considerable wind, at what height would you head almonds, olives, pecans, figs?—D. F., Patterson.

Your friend is wrong in the head. A tree does not grow up from the ground. Unless some one shifts the ground in cultivation or otherwise the head draws nearer to the surface because the branches enlarge in diameter. That is, the center of each branch remains just where the bud, from which it grew, started on the stem; the lower side being nearer the ground therefore by one-half the diameter of the branch. This amounts to a great deal with trees which reach such size and thickness of limb as the walnut, fig and pecan. If you wish the lowest limb something less than four feet start the limb at four feet and it will draw nearer to the ground later. Almonds and olives we would head lower—say with the lowest limb not more than one foot from the ground in your part of the state. As for the wind, the higher the wind, the lower the tree.

Apple Pruning in Pajaro Valley.

[By W. H. Volck, Horticultural Commissioner of Santa Cruz County.]

The subject of pruning is one that has not received as much attention from the apple growers as it should. In general, the apple trees of Pajaro valley are carrying altogether too much brush. Great benefit will be derived from vigorous pruning if the cutting is confined to small branches such as can be removed with the shears. The benefit to be derived from such a method of pruning has been well demonstrated in the experimental plot of Newtown, on the C. H. Rodgers place near Watsonville.

In the winter of 1912-13, trees in this plot were pruned in a thorough manner. The style of pruning resembled that followed with apricots. One-half to two-thirds of the twig surface was removed. All twigs were headed back and many cut out entirely. In addition to this general pruning, all mildewed and diseased twigs were removed as far as possible. This cutting was all done with the shears, in order to avoid wood-rot troubles which followed the removal of large limbs.

The pruning experiment referred to has demonstrated that a suitable reduction can be made in the bearing surface by the use of the shears alone. This style of pruning is more expensive than the said method, but when the future of the trees is considered, it must prove far more satisfactory in the end.

The pruning method adopted in the Rodgers experimental plot was so radical a departure from the standard practice of this locality that the results were the subject of considerable discussion and some doubt among growers who saw the work being done. The actual result was a very vigorous, early growth, starting uniformly all over the trees and a good setting of fruit where the frost did not destroy the crop. During the summer considerable additional pruning was done, especially to remove mildewed twigs, but also to keep the centers properly opened up. The suckers were headed back two or three times to produce new fruit wood along the main branches. In addition to pruning, these trees were sprayed several times, principally to control mildew. Check rows were left to show the results of both spraying and pruning.

The final result of these treatments has been to so improve the physical condition of the trees that they scarcely look like the same variety as those grown in adjoining plots. The twig growth has become more sturdy, and in spite of all that has been removed, both winter and summer, the trees have made a greater actual increase in size than those treated in the regular way. In short, a wilderness of diseased brush has been replaced by a well distributed, healthy, fruit-bearing surface. Indeed, the results of this experiment have been such as to justify a general recommendation of thorough pruning along these lines.

PRUNING YOUNG TREES.—It has been stated that most of the old trees contain too many large branches, but these cannot be removed because of the danger of wood-rot setting in at the cuts. However, had these trees been taken in time, the growth of surplus branches could have been prevented. It is important, therefore, that the young trees now growing up

should be pruned properly.

In starting a young tree the grower should have in mind its ultimate appearance when in full bearing. In general, only two branches should be allowed to start from the same point and a central branch is not advisable. The center should be kept well pruned out, as there is a constant tendency for this part of the head to become too dense.

Three main branches are enough. These should start from two forks, a foot or more apart, and may be allowed to fork again at a foot and a half to two feet from the main trunk. This makes six sub-branches upon which the entire structure of the top may be built. Of course, short twigs may be allowed to grow out from these main branches and even from the trunk. Indeed, it is advisable to encourage such growth to prevent sunburn and promote more rapid development of the trunk, also, these twigs, if properly handled will become fruit-bearing wood in time.

In shaping a young tree two or four years old, the grower need not hesitate to remove two-thirds to three-fourths of the top, for this apparent loss will be quickly made up and along the correct lines. The pruning referred to is to be done with the shears, no undesirable limbs being allowed to grow large enough to require sawing.

The shaping of young trees can be greatly simplified by summer pruning. In this way the growth can be continually directed along the correct lines. All the shoots should be nipped back three or four times during the summer. This will cause them to grow sturdy and strong enough to resist the wind. Undesirable shoots can be prevented from growing by summer pruning, and also much benefit will be derived from frequent removal of mildewed and otherwise diseased twigs.

By following out such a system of summer and winter pruning, the young trees may be developed to full bearing condition without the use of the saw, thereby avoiding the wood-rot trouble and insuring profitable production for 50 to 75 years. The points to be remembered are the removal of undesirable branches before they have become too large to cut with the shears, and the pruning out of all diseased twigs, especially those covered with mildew.

TIME OF PRUNING.—There is a great amount of misinformation regarding the proper time to prune apple trees. As a matter of fact, the pruning can be done any time if no large branches are sawed off. This is fortunate for the grower, enabling him to finish up the pruning operations in October and November and have the orchard ready for winter spraying at an early date.

NO STATE HORTICULTURAL SOCIETY.

To the Editor: Will you kindly inform me to whom, and where, I can send in an application for membership to the State Horticultural Association, as I am desirous of joining that organization.—A. S. C., Gridley.

[There is no such organization now in existence. Since the state has so generously provided for the State Commissioner of Horticulture no private organization has been maintained. Excellent meetings of fruit growers are held under the auspices

of the State Commissioner. Write to him at Sacramento for further information and for his publications.—EDITOR.]

WINTER BARTLETTS.

To the Editor: I would like some information concerning the Winter

Bartlett pear, where there are some growing, the kind of soil adapted to them, the market for them, and if they are good bearers, etc.—SUBSCRIBER, Elk Grove.

[We do not know enough about them to say much. Who has them, and wishes he had more, and why?—EDITOR.]

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are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

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provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection. Call and talk it over with us, or write for our 1913-14 catalogue.

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STRICTLY TRUE SELECTED STOCK WRITE FOR PRICES.

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221 North Curtis Avenue, Alhambra, Cal.

An Hour of Frost Versus Year's Labor.

To the Editor: I want frost protection for ten acres of large apricot trees set twenty-four feet apart. How many heaters are necessary? What capacity should they be? What size and kind of storage tank? What is the best frost alarm? At what temperature should it ring?—J. W. S., Santa Clara county.

WHAT CALIFORNIA GROWERS ARE DOING.

[You will be interested in the equipment and experience of Andrew Ryder whose fifty acres of protected deciduous fruits lie almost on the level at the edge of the Placer county foothills. He has a hundred one-gallon pots per acre, a 10,000-gallon concrete storage tank on the highest corner of his place, and a Tycho's frost alarm placed at one of the coldest spots of the orchard. It is set to give the alarm at 33° or 34°, since it is much better to get the men out an hour too soon than five minutes too late. And there are times when the temperature drops a few degrees very quickly.

Mr. Ryder has the Bolton equipment which is entirely satisfactory to him. There are several other makes which would do good work.

These pots are set in the centre of the space between trees and are always covered except when burning. An extra row is set on the windward side of the orchard. Oil seems to be the very best fuel as it is much the cheapest and easiest handled. But should water get mixed in, it would delay lighting and would make the oil boil over after it gets hot.

For several reasons, 75 two-gallon pots are better than 100 smaller ones. Seventy-five per acre will furnish more heat, burning twelve hours without refilling. The smaller ones burn eight hours.

When two frosty nights come in succession, the men are scarcely fit to refill the pots in the day between. Often the smaller ones would need refilling and the larger ones would not. There is no use in taking chances of having to refill on a frosty night when the fires have burned out. The labor of refilling is reduced 25% anyway, the labor of painting or dipping in oil before storage in summer is reduced that much, and the initial cost is practically the same. Should temperature be falling rapidly, they heat the orchard quicker.

The alarm should be set early in spring before buds begin to swell. Last year Mr. Ryder's tenants lost \$10,000 worth of peaches, plums, and cherries. The damaging frost in his section usually comes in the middle of April. It came a month earlier last year and he wasn't prepared. This spring he has already filled his storage tank and the pots are ready for business.

Buying oil by the tank-car load, he gets 10,000 gallons for \$220 or 21-5 cents per gallon, besides the freight which is very low. In smaller quantities, the oil costs 6 cents per gallon, which includes the wooden barrels, and the freight is much higher. "Star Fuel Oil, 24 gravity," is best and cheapest, but any cheap distillate will do. It can be bought in San Jose. It would be well to combine with some of your neighbors to buy a carload. J. M. Nelson who lives toward Sunnyvale has found frost fighting very

profitable, as also have Messrs. Keith, Merrill, and Brown on the Los Gatos road. The oil will keep good until you need it unless you have the experience of Mr. Ryder. In blasting out the place for his storage tank, two or three years ago, he must have left a crack in the rocks. He used 5000 gallons for the first filling of the pots. Four thousand gallons mysteriously disappeared. Last winter the whole cavity was recemented and tested with water.

A 3-inch pipe runs from the bottom at a gentle slope far enough to permit tank wagons of 200 gallons capacity to drive under and load by gravity. Two large rubber hose to unload the oil into the pots proved too clumsy to handle so that now four men follow each of the two tank wagons filling the pots from ordinary 5-gallon oil cans.

Ten men are kept on the ranch every night for six weeks during the danger season which lasts from the time the fruit buds swell until the fruit is well set.

When the mercury in the alarm thermometer goes below 34° an electric circuit is broken and a bell rings. The men at once get busy. A tested thermometer, accurate as those doctors use, can be obtained for \$5 and should be used to tell when lighting must begin. It will save much fuel, for of course the oil need not be lighted until just before freezing point is reached.

The oil is lighted by kicking the cover from the pot, squirting onto the oil a little gasoline from a quart bottle through a quill in its cork, and applying the flame of a torch made by plugging the end of a two-foot inch gas pipe, filling it with kerosene, and plugging the other end with lamp wick or cotton waste.

It seldom frosts at blooming time in fruit sections of California, except on very still nights, and the heat generated is held in the orchard by a layer of smoke above it and by the leaves and branches themselves. Mr. Ryder's outfit raises the temperature four to nine degrees when it may be several degrees below freezing in adjoining places.

Should you prefer a galvanized iron tank, one of 2500 gallons capacity which would be safe for ten acres will cost about \$50, and a wooden one cheaper.

In late spring, the pots and covers should be dipped in oil or painted, and packed out of the weather. C. C. Teague, general manager of the Limoniera company, Santa Paula, who has had more experience handling frost fighting equipment in citrus groves, than any other man in the state, has the following to say:

"I have just returned from a two days automobile trip through the principal citrus districts of Southern California, and the thing that impressed me more than anything else was the tremendous loss that the growers are having through neglect of their oil pots. It has been estimated that the citrus growers have over \$2,000,000 invested in oil pots. In the two days trip I saw only a very few cases where the pots had been coated with asphaltum or paint to prevent rusting, and as a consequence nearly all of them are rusting badly, and in my opinion will be a mass of junk probably in two years. The new type of pot should last at least ten years, and probably fifteen,

with proper care, as the burning action is not hard on them until they are burned entirely out, which will rarely be necessary. It then is extremely important that the oil pots should be kept thoroughly painted.

"We place asphaltum in kettles and melt it, then remove it from the fire and after it has stopped boiling, di-

lute it with one gallon of stove distillate to ten pounds of asphaltum. This stock mixture is then put in barrels ready for use. If it proves too thick to apply well with brushes, it can be diluted with engine distillate or gasoline to the required consistency. This paint costs less than 10 cents per gallon."

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1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station \$1.96 1/2 gave \$22.11—over 1000%. At Ohio Station each dollar paid for itself and gave \$5.68 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

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LIGHT DRAFT HARROW CO., 623 Nevada Street, Marshalltown, Iowa

Promising Co-operative Cannery.

(Continued from Page 257.)

auto-truck haul will probably develop and displace horses for fruit carriage. Fruit will all be picked in prime, ripe condition from the tree, and canned the same or succeeding day. Of course, good roads will have to be maintained.

Stockholders expect to remain independent of all other cannery concerns. At the end of the season, enough of the profits will be used, according to the president, A. Fereva, of Newcastle, to pay a 6% dividend on stock actually paid up. Twenty per cent of the remainder will be reserved as a sinking fund, and practically all the rest will be divided among shareholders pro rata per tonnage of fruit brought to the cannery.

While only peaches will be canned this season, they hope to use in following seasons pears, plums, apricots, cherries, asparagus, and even tomatoes. A drier will be added as soon as possible to take care of second-grade peaches.

The cannery is very desirable for the good of the whole country, for all growers remember that last season the buyers for other canneries did not appear until over half of the clings were gone. Many growers lost heavily, while others took their chances on shipping and hit lucky markets. Hereafter a stable market is assured for the cling varieties.

CALIFORNIA CELERY GROWERS' ASSOCIATION.

An association of 110 celery growers, that has run smoothly since its organization thirteen years ago, is to be found in Orange county. Hard dealings with commission men gave a common cause to weld the farmers together at the start, and wise details in its constitution and management have placed under its control 90 per cent of the 1200 acres devoted to celery in that county.

Under its constitution, the Association may borrow any amount of money up to \$40,000 annually. This it does when its members need the money, the First National Bank of Santa Ana supplying the cash, without question, at 6% interest, to be repaid as soon as the Association chooses. This is loaned at 6% to its members, who would otherwise have difficulty in getting it at 7 or 8 per cent.

The Association buys seed in France for the whole section. Bordeaux spray material is also bought wholesale and sold to members at cost.

G. W. Moore, one of the charter members, and now its president and manager, employs crew bosses and crews who cut, grade, pack, and label the crop for all the members, charging the cost to each one individually. The manager apportions the amount that each may cut at any one time pro rata, according to the market demands. Every member agrees to turn over his entire crop to the Association for marketing. The Association keeps its books open at all times to the inspection of its members and renders complete original sales accounts when requested.

The California Vegetable Union markets the crop under contract with the Celery Growers Association, charging $\frac{3}{4}$ c per dozen for all selling under 18c and up to $2\frac{1}{4}$ c for higher priced

sales. The Vegetable Union has salaried agents in the principal Eastern markets who look out for its interests in all f.o.b. sales and see that the auction sales are well handled.

Expenses, salaries, losses, etc., incurred in Association business are paid from a fund created by withholding $1\frac{1}{2}$ c per dozen bunches from the returns of all sales. Whatever is left at the end of the season is refunded to the growers. This usually amounts to two-thirds of the entire fund.

Owing to daily fluctuations of price on the markets, the average price of all sales of each grade for each month is paid to the growers according to the amount each has shipped of each grade during that month. The shipping season lasts from November to March, inclusive.

Each crate shipped receives the Association label after inspection by the manager or his field superintendents. This is where the Association has its only difficulty. Owing to the large amount of labor involved in celery raising, Japanese, Chinese, and Mexicans compete strongly with white growers. But these "no savvy" "throw out bad celery"; and many do not join

the Association or else violate the high grade standard indicated by its label. Inferior celery knocks the prices on all of it.

Aside from this difficulty, the Association has had prosperous, peaceful

sailing, no losses from dishonest commission men, supplies bought at wholesale, money borrowed cheaper than usual, intelligent distribution to markets that need the celery and will pay the price.

EXCLUSIVE GROWERS OF

Citrus Trees, Date and Fan Palms

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This stock has all been developed on the Santa Anita (E. J. Baldwin) Ranch, in the San Gabriel Valley, than which no finer soil and climate for tree culture can be found in California.

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If you are thinking of Onion or Tomato Seed we can fully recommend as the best in quality our Australian Brown, all globe or flat, Red, Yellow or White Onions—or the Stone, Earliana, Matchless or the New San Jose Canner, Tomatoes.

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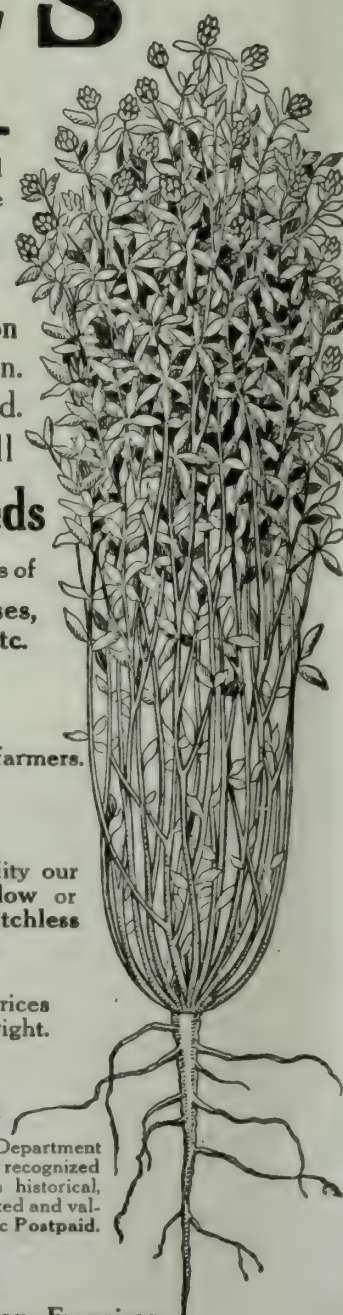
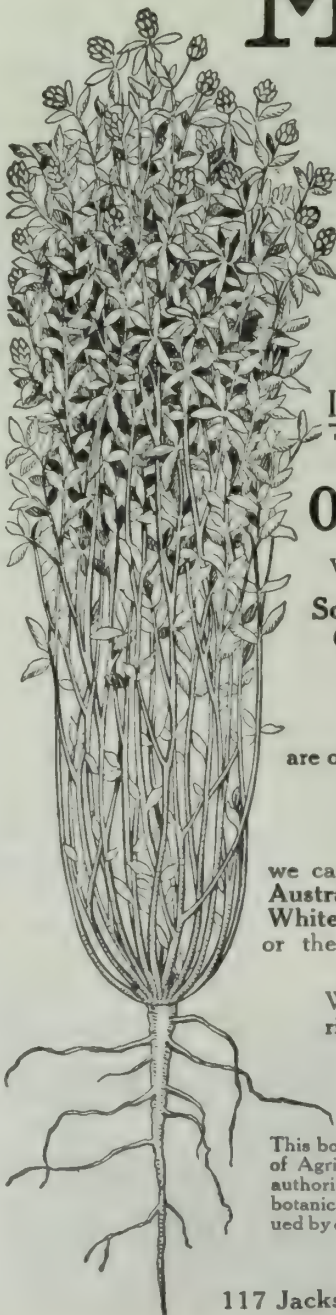
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117 Jackson Street

San Francisco



Placer County Horticultural Notes.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Elaborating some advice read in a recent farm paper, the Penryn Fruit Co. is painting young fruit trees with thin whitewash mixed, while hot, with glue and aloes. Whitewash protects from sunburn and insects, aloes protects from the numerous jackrabbits, and the glue will make it all stick much longer. One application with a brush serves two important purposes.

Leave the down-hanging shoots on your fruit trees. Such twigs can hold twice as much fruit without breaking and they shade the trunk from sunburn. On H. L. Taylor's 80 acres of three-year-old orchard, no other protection is given from sunshine, yet the young trunks are smooth barked and vigorous.

"Do not use myrobalan or Mariana roots for plum trees to be planted in well watered ground," is the advice of Andrew Ryder of Placer county. He believes that the loss of many of his young three-year-old trees on such roots is that he heads back the tops each year to give the tree proper shape and make the branches stocky, but the roots spread laterally so thickly that about the third year they send up so much sap as to drown the limited number of buds. Peach, apricot, and almond stocks are all right because they do not spread so widely with moisture-gathering roots.

Strawberries are raised between young orchard trees in Placer county quite extensively, to pay the cost of care and rent. One of H. E. Butler's renters, some years ago made enough from the strawberries for a visit to Japan. But L. J. Kinney, who allows the practice in order to get a tenant to care for the trees, believes it is wrong. The strawberry crop removes much plant food, but of course that can be returned. But it also requires much irrigation over the whole surface of the ground. This brings the tree roots near the surface. To be broken later with the plow and to lose the benefits of deep rooting in a dry, hot summer climate.

A nursery grafted fruit tree curves outward and upward from the stock. When planting such trees, H. E. Butler, of the Penryn Fruit Co., insists that the inside of this curve be turned toward the north. If turned the other way, the rays of the sun concentrate in the concavity and deaden the bark. This gives the young tree a setback at a time when every encouragement for thrifty growth is of much higher importance than in later years.

If you do not have enough water to irrigate your ripening fruit and your young trees, give it to the young trees and sacrifice the crop. The life-long injury done the one to three-year-

olds by lack of prompt watering will cost you more than a single crop.

Climax and Santa Rosa plum trees have been in such demand from the nurseries that no more can be bought in this section.

WALNUTS EVERYWHERE.

To the Editor: In the city of New Westminster, British Columbia, the English walnut grows, flourishes and bears good crops of nuts. A friend, Mr. Jas. Wise, has 3 or 4 trees that are about 25 ft. high and about 1 ft. in diameter. The hillside on which they grow has a very shallow soil underlain with an impenetrable hardpan, or cement gravel as it is termed up there. The soil is not more than 3 or 4 ft. deep. The rainfall is 60 to 65 inches per year, and the winters are very cold. Snow 2 to 4 ft. deep occasionally and a temperature of 8° below zero some winters. I lived there nearly twenty years, engaged in salmon canning and farming (dairying).

I have been in California 21 years, as that northern climate was too cold and damp in winter. If walnuts will grow up there under such adverse conditions, they ought surely to grow anywhere in California if given an abundant supply of moisture during the growing season.

We had several walnut trees on low (river bottom) land round the cannery, but they did not do well, although the soil was 18 to 20 ft. deep, but on the shallow well-drained dry soil on the hillside, with abundant rainfall in summer, walnuts, apples, pears, cherries, plums, and Italian prunes grew remarkably well. There are cherry trees there as high as the Catholic church, having been planted in the church lot years ago. I saw them four years ago when I was up there putting in a salmon cleaning machine which I patented and sold to the B. C. Packers Association.

Between New Westminster and Burrards Inlet in 1872 I saw the finest body of pine timber I ever saw anywhere. Straight as a gun-barrel and 100 to 120 ft. high, and 3 or 4 ft. in diameter, all on shallow rocky (boulders) soil. It is a wonderful country for the dairy farmer.—SAMUEL HAIGH, San Jose.

[You strike mighty close to the truth of it when you say that the English walnut will grow on almost any depth of good soil which gives it regular and adequate moisture—never too little, never too much during the growing season. We insist upon soil depth chiefly because depth provides both reservoiring and distribution. Deep water-logged soil and shallow, drying-out soil are both bad. Aside from this, the safety and bearing of the trees so far north is due to the fact that the winter temperature is low enough to keep the tree dormant until the frost-free season really comes. Our winters are so mild that the tree gets busy before that happy safe time arrives. Therefore, we are watching vigilantly for late bloomers in which the habit of the tree resists the seductive flattery of the atmosphere.—EDITOR.]

Kings county is to have a new 5000-ton peach cannery. 1914 Tuscans are being contracted at \$25 per ton in this section.

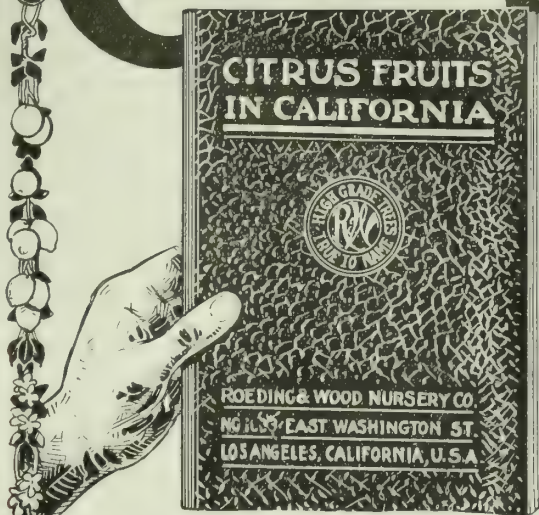
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"A Stitch in Time Saves Nine"

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

If you will write to us for the booklet "Feed the Soil that Feeds You" it will be promptly mailed free. It explains that fertilizing is an investment, not an expense.

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WEST INDIA GARDENS,
Altadena, California.

A Blooming Exposition 1915

Holland bulb growers are sparing no expense to make the finest exhibit in San Francisco 1915 that has ever been known at a world's fair. From the beginning to the end there will be a continuous change of their multicolored gardens as one flowers after another through the season. Over in Holland even now they are preparing to lay out grounds as they expect to have them at the Exposition. The bulbs grown there will be shipped for use here with such improvements as may occur this season to the men in charge of the Holland gardens.

The leading rose creators of Europe and America will compete with their new unnamed hybrids for a \$1000 prize cup in addition to the regular prizes. The winner will be chosen by a horticultural jury and probably named by the Exposition directors.

Over a hundred new roses will be entered by four exhibitors from France, Germany, and Ireland. The Irish exhibits were shipped from Liverpool January 30, 1914, for the purpose of thorough acclimating. One of the finest will be named in honor of G. A. Dennison, the exposition's chief of horticulture.

Practically all America will also compete, and there are many hitherto unknown "Burbanks of the rose" who will show specimens of all pleasing tints and shapes of bush and bloom.

The aim of all these wizards has been to extend the seasonal blooming period or periods, as well as to improve the color and form of the bloom. Most of the new creations are of the hybrid perpetual type, and many are said to bloom practically all the year round. The colors are described as being in many cases wonderfully beautiful. The Irish offerings range, for example, from what the originators describe as "light chacoise yellow, flushed with pearl pink," through reddish copper and bronzy ecru, Indian reds and brilliant velvet crimsons, to a rose more nearly a perfect black than any of the old types. Blue roses, so-called, of several types, also will be entered.

Another distinct novelty is a hybrid perpetual bedder of a beautiful camellia form and in color a rich golden yellow with deep Indian yellow anthers, which remains in bloom an extraordinarily long time. This, it is hoped, will go far toward solving the difficult problem of producing a golden rose of a new and more attractive type than any before known.

A new red sunflower originated by Professor and Mrs. Cockerel of Colorado will be shown with specimens showing the intermediate steps in its development from the common yellow variety. This illustrates the Mendelian theory of inheritance.

Double petunias are now produced by pollinating a single flower from a double one, since the double petunias do not produce seeds. Myrtle Sheppard Francis (?) has originated double petunias which produce seeds and reproduce double flowers of all colors. These will be on exhibit.

New Hybrid Giant Flowering Marshmallows of all colors from white to intense crimson will be shown.

Luther Burbank will have a special exhibit, and his friend, Carl Purdy, of Lily fame, will have a surprise unannounced.

The new family of strawberries produced by crossing two wild California strains after twenty years of straw-

berry work, will be exhibited by Albert Etter.

New shipping freestone peaches from Arkansas and Washington, berries and rhubarb from J. B. Wagner in south California, and bearing date trees with a complete showing for the new date industry of California, are other interesting features.

At least ten acres will be given over to the various displays of the world's various horticultural products, aside from over 65 acres of the exposition grounds devoted to the twenty-five principal landscape gardens. Many of these exhibits, from practically every country in the world, will be given up largely to the newer and perfected species and varieties of plants and fruits. Also in this department there will be many working displays of growing plants and fruit trees with gardeners and expert orchardists at work; the object being to make of the horticultural display an up-to-date school of methods and processes, open to all; a unique and highly beneficial policy which also obtains in practically every one of the eleven departmental palaces of this greatest and most comprehensive of all world exhibitions.

At the Panama-Pacific International Exposition the lover of flowers and of gardens and orchards will be able to stroll among the most wonderful winter-to-winter gardens ever displayed at an exposition.

EGYPTIAN OR KAFIR AND ALFALFA.

To the Editor: Is Egyptian corn good hog feed when ripe? Will they thresh it themselves if the heads are cut off and fed to them? Is Kafir corn more productive than Egyptian? Egyptian corn does well, but I never have seen any Kafir corn growing here.

I am thinking strongly of going into the hog business and would like to grow some grain to feed with alfalfa which will be the main feed. I read with much interest your article on 'Hog Raising,' printed a few weeks ago. In it you mention one man had tried Kafir corn and considers it equal to Indian corn. It would be difficult to get any grain threshed and I would like to grow some that I could put in the barn unthreshed and let the hogs do the rest.

I have tried hogs on alfalfa straight and find that they do much better to have a small ration of grain. I am prepared to fertilize and irrigate and wish to get the maximum yield on a small piece of ground. I have grown good Indian corn with four irrigations—planted the first of June. Would Egyptian or Kafir corn beat this do you think?—G. E. S., Elk Grove.

[Your scheme will work all right. Kafir corn is considered better than the old Egyptian in most places in the interior valley. As a grain it is at least as good as Egyptian and can be used in the same way. There is no doubt about all the best grain sorghums being an acceptable substitute for Indian corn for hog feeding. If however, you have a good place for Indian corn with irrigation you should try both the same year and see how they compare for your purposes. The chief reason for using a sorghum is that it likes dry heat better than Indian corn and will give more product with less water.—EDITOR.]



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R. F. WILSON, Stockton, California.

Standardization of the Apple Box and Apple Pack.

It will be remembered that the Northwest (Washington, Oregon, Idaho and Montana) united in framing a bill, introduced into Congress by Judge Raker as H. R. 11178. This bill, as it standardizes the apple box and apple pack, has rare merit, and unless it is practicable to effect amendments that would improve it, it should certainly pass.

A committee of California growers, packers, boxmakers, and commission men met in Sacramento and resolved unanimously to favor the bill in the main, but suggested certain changes that they supposed would meet universal favor.

A letter from Judge Raker written February 12th gives us the following information:

"The Committee on Coinage, Weights and Measures have had hearings on bills H. R. 11178 and 12666 yesterday and today. The hearings were completed today and will be printed for the use of the Committee and for distribution within a few days. All of the representatives present were unanimously in favor of H. R. 11178 as originally introduced and are opposed to the amendments as suggested in your night letter, after the meeting of the delegation of representative apple growers, packers, and box manufacturers. Also per your letter after this meeting.

"It seems to me that bill H. R. 11178 ought to pass without the amendments specified in H. R. 12666, for they seem to think that the amendments suggested will weaken the bill.

"I regret that you or some representative from California was not here to present the views contained in your telegram and letter. If you and those at the conference are decidedly in favor of these suggested amendments and think that they should be incorporated, kindly present a statement of that fact so that it can be filed with the Committee for their use so that it can be considered after the hearings are printed."

As suggested above, standardization is so important that if these or any amendments are likely to jeopardize the passage of this bill, then we may well hesitate before pressing these suggested amendments. But we cannot understand how anyone can object to these few amendments, and the reason for them, if they are rightly understood. California agrees to substitute the Northwest box in lieu of her own. We also are with our friends of the Northwest in nearly all their specifications as given in H. R. 11178.

The first change, permitting five instead of three imperfect apples in a box, was a compromise with us, as some thought five were too few. All present—and all were men of wide experience—said that the number "three" was unreasonably small, and feared it would cause trouble and possibly lead to expensive litigation.

Our proviso, excepting shipments to such countries as Australia and New Zealand where a special box is required by law and no other permitted, and to other countries like the Philippines where custom makes it necessary for our shippers to use a certain receptacle, seems to us very desirable. Of course, the fruit-growers of Oregon and Washington are not directly and

immediately interested in exports; but if, as one of our most extensive shippers stated at our conference, it would ruin his trade, which is of large and growing importance, then surely no one should oppose it. Even the apple growers of the Northwest are indirectly affected, as the tension of our own markets is relieved by all exportation, and very soon they will be directly interested.

Section 4 in the original bill uses the words "Reasonably and properly." It was felt that this was too indefinite, and so it was changed to read: "Each pack to be 90% perfect on a combination of all defects, or 95% perfect on any single defect." It would seem that any up-to-date apple grower would hail with delight such a boost toward standardization of pack as this would insure. Do we not need a definite requirement? This was the unanimous opinion of all at the conference.

The other amendment makes the time for the law to take effect "1915" instead of "1914." This simply gives time for the growers to utilize the boxes on hand, and its importance is evident. Australia gave two years to this purpose.

A. J. Cook,

State Commissioner of Horticulture.

CONTROL THE CUTWORMS.

Young plants that are just pushing through the ground are often attacked by sleek, well fed, greasy, sparsely haired cutworm caterpillars. The plants are found cut off near the surface of the ground, with the wilted tops lying near.

After the crops have started growing, the standard remedy for cutworms, according to Professor A. L. Lovett, Oregon Agricultural College, specialist in garden and field pests, is the poison bran mash. It is prepared as follows: Coarse bran, 16 lbs.; Paris Green, ½ lb.; salt, ¼ lb.; cheap syrup, 1 qt.; warm water to make a coarse, crumbly mash. Be sure not to get the material sloppy; it should fall apart readily in the hand after being pressed together. Small heaps of the mash may be placed about the young plants. If the cut worms are working in from one side of the field, the mash may be scattered or drilled at right angles to their line of attack. Scatter it in the evening so that it will be moist for a longer time. Chickens should not be allowed free range on a treated field.

Frequent stirrings of the soil will expose many of the worms. They may also be rendered less harmful by pressing stiff cylinders of paper or tin down into the soil about the plants, allowing them to project about two inches above the ground. (F. H. Williams of San Leandro, Cal., wraps each plant for 200 acres of tomatoes, in a piece of newspaper.)

Because of their large numbers, cutworms have invited the attack of many natural enemies. Poultry, and several types of birds including the robbin, cat bird, black bird, and quail, feed on cutworms. Toads feed on these worms and should be encouraged and protected rather than destroyed. Spiders and wasps also prey on cutworms. The majority of mottled prey and brown moths that are attracted to lights are the adults of cut-

worms. Cutworms pass the winters as eggs, pupa, adult moths, or as half grown cutworms in the soil. The last named is a type most injurious in Oregon.

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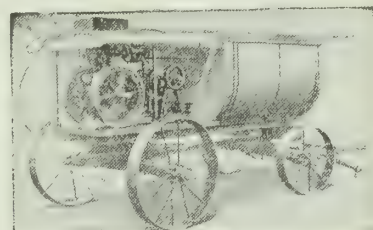
200,000 sold in one season. Hundreds of orchardists using and recommending the Bolton Orchard Heater. Their words of praise are worth more than anything we can say. One man can light 100 in five minutes.

Send for booklet R.P. It contains information about orchard heating—names of prominent orchardists who are using it and facts not generally known and which are suppressed in high priced heaters. Send today.

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California's Largest Orange Show.

[Written for the PACIFIC RURAL PRESS.]

With exhibits from as far north as Fresno county and as far south as San Diego the opening of the National Orange Show at San Bernardino, February 18, proved to be the largest exhibition of its kind ever staged, even in a country where big things are so numerous as in southern California.

To describe in detail all of the unique methods used to show off our golden fruit would require much more space than we are allowed to use at this time for there was scarcely an exhibit that did not have commendable features.

As before mentioned every citrus section that pretends to be up and doing had fruit entered in the race for prizes as a win here meant much in advertising the section that won.

The judging was done by the use of a score card which has given very satisfactory results and competent judges decided by this means on the quality of the fruit.

All of those exhibiting for prizes were located in the tent known as the Fruit Exhibits Department which also accommodated the feature displays including railroads and the like. It should be said here that these feature exhibits were alone worth more than the price of admission as there was everything represented from a \$20 gold piece by Fresno county to a limited train by the Santa Fe railroad and everything was made with the golden fruit for which the show is given in honor of.

It is doubtful whether any other show held in the West can boast of so much beauty as was to be found in the Fruit Exhibit tent for it was a mass of all that decorators could ever hope to attain in the way of natural artistic effect with the deep, medium, and light shades of orange color.

Passing from this immense exhibit tent into the Industrial Department one found that the manufacturers and citrus supply houses had not overlooked any opportunities for combining beauty with business for here also the decorators had plied their trade so well that the unsuspecting visitor was easily approached by the energetic salesman and could by attentive listening learn everything from the manner in which the citrus tree is raised in the nursery to the most modern frost protection devices for saving the crop. We were informed by the management that a great many applications for space in this tent had to be turned down on account of lack of space, which shows that this show attracts the grower as well as the tourist.

Free entertainment was provided in still another large tent and many of the counties where citrus fruits are not abundantly grown took advantage of the show to give free lectures and moving picture shows daily.

There was only one disappointing feature of the entire show and that was the weather, for if ever Nature worked overtime supplying moisture it was during the fore part of this show.

As one visitor remarked, "Anything but the San Bernardino Orange Show would be a complete failure with such weather difficulties." Yet with train service entirely annulled on some lines and badly tied up on all lines the people came and the second day things looked so promising that predictions of a 70,000 attendance for the week were made.

The citrus men and more especially those of San Bernardino county deserve great credit for the clean cut way in which this show was staged and are justly deserving of the rapid growth from a 60 by 100-foot tent four years ago to a floor space larger than the Colliseum in Chicago this year.

If there is anything in advertising this show should prove a dandy for the tourist trade as well as for the man who has gone for educational purposes.

WHAT OUR "THOUSAND QUESTIONS" IS FOR.

To the Editor: Kindly answer the following questions:

1. Would you advise growing crops between young prune trees?
2. Would it be advisable to use fertilizer for the trees while they are young? If so what kind would you advise?
3. Would gooseberries be profitable grown between the trees in this locality? If so what variety would you advise?
4. What is the best fertilizer for corn, other than old manure.
5. What is the best variety of winter pear for market use?
6. Please give me formula for white-wash. Do you advise its use for young trees?—NEW SUBSCRIBER.

Santa Rosa.

[All these questions, except No. 5, are fully answered in our new book, "One Thousand Questions in California Agriculture Answered." This book has been especially prepared for new subscribers so that they could start even with the rest of us in the game of "Queries and Replies." If they will study this book as questions arise and only ask us what they cannot find therein, we can give more space to newer information and that will make our paper more valuable to all subscribers. Answering No. 5: The winter pears chiefly grown in California are Winter Nelis, Easter Beurre and P. Barry. Mr. Blochman is continually reminding us that we ought to grow more winter pears. We suspect that he likes pears particularly. It is probable that more winter pears could be profitably sold in the California markets if some one should make a specialty of growing and marketing them in fine shape, but one should proceed cautiously and test the market closely before largely extending this line of supplies.—EDITOR.]

DANGER IN BAD HAY.

To the Editor: Water backed into our barn some time ago and wet about an inch of the bottom bales of a large quantity of hay stored therein. In most places the hay is mouldy to a depth of two or three inches, the remainder being pure and sweet. We would like to know whether it will hurt to feed this hay to stock without separating the damaged from the good? I am told that it will not injure cows, that they will pick over it and leave the damaged hay, but that

it will give horses heaves.—E. H. S., Delevan.

[Bad hay is dangerous, especially so to horses but never fully safe for anything. We would never feed it to animals we thought much of. Cattle

are in less danger and the common practice is to work off doubtful stuff on dry stock. There is, however, always some risk in feeding bad stuff. The best use for it is for plowing under as manure.—EDITOR.]

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Orange and Lemon Trees

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Villa Franca

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Marsh's Seedless

Also considerable surplus in Figs, Peaches, Plums, Prunes, etc., etc.

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California Rex Spray Co.

Benicia, Calif.

If you want the best
Orange Trees

WRITE FOR PRICE LIST
UNITED FRUIT CO.
NEWCASTLE, CAL.

Nitrate Spraying for Fruit Stimulation.

To the Editor: I have seen something in the papers about spraying fruit trees with nitrate of soda. Can you give any information about this? When should the spraying be done? Must it be used alone or can it be mixed with other spraying materials? Are the results as good if used after trees have already been sprayed with other things?—H. W., Mountain View.

[In addition to the information on this subject given on page 37 of our issue of January 13, we have now the following statement by W. H. Volck, Horticultural Commissioner of Santa Cruz county, under date of February 2:

Winter spraying has been greatly retarded by the rains and there remains only about 30 days in which to do this important work. Much spraying can be done in this time if the growers will take advantage of all favorable weather. The crude oil emulsion is especially well adapted for use under the present wet winter conditions. It is not seriously washed off by rain and only an hour or so is re-

quired for the spray to set on the trees. Spraying with crude oil can then be done between showers.

The use of long hose will render possible the spraying of trees on very wet land which might otherwise remain too soft to support a load. A hose 250 to 300 feet long can be readily handled by two men and will have sufficient radius to empty a tank from one stand. This may look like an expensive and tedious operation, but it is resorted to by pear growers whose orchards are frequently under water at the time when they must be sprayed.

The nitrate of soda spray should also be applied as soon as possible. This material will wash off and requires 3 or 4 days of dry weather after application for the best results.

WINTER SPRAYS.

Sprays to be applied when the trees are dormant.

Apple—Crude oil emulsion or nitrate of soda and lye.

Pear—Crude oil emulsion or nitrate of soda and lye.

Cherry—Nitrate of soda and lye.

SPRING SPRAYS.

Sprays to be applied when the buds are bursting:

Apple—Lime-sulphur solution.

Apricot—Crude oil emulsion.

Pear—Lime-sulphur solution or Bordeaux mixture.

SPRAY FORMULAS.

Crude-oil emulsion:

Water 175 gallons
Lye (according to hardness of water, ...1 to 2 pounds
Soap, whale oil 12 pounds
or liquid soap 3 gallons
Crude oil 25 gallons

Place these materials in the spray tank in the order mentioned, and with agitator in motion. Allow a short time for the thorough mixing of lye and soap with the water, then add the oil. If the water has been properly softened the oil will mix into a brown emulsion and not float on top.

Nitrate of Soda and Lye:

Water 200 gallons
Nitrate of soda 200 pounds
Lye, caustic soda 25 pounds

Mix in the spray tank with agitator in motion, being careful to break up any very large lumps of nitrate before placing in the tank. Two or three minutes agitation should be sufficient to dissolve these materials.

WICKSON PLUMS POLLENIZED BY CLIMAX.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Many Placer county fruit-growers complain that the Wickson plum blossoms heavily and sets fruit which drops before growing to the size of a pea. Some lay the trouble to spring rains or frost, for the Wickson blooms early. W. R. Fountain thinks it will bear when shielded from north winds. Taylor Bros. and Andrew Ryder feel they have proof that the trouble is lack of pollination, which may be remedied by planting close to Climax plums.

Mr. Ryder's Wicksons fail, except fifteen or twenty set in a low cold place next to some Climax. These few trees bear big crops.

E. G. Taylor has 150 ten-year-old

Wicksons on a southeast slope planted in seven rows next to a block of Climax. The first row next to the Climax must always be thinned by hand in addition to the usual natural June drop and the loss of those not pollenized. They are left three or four inches apart and then make among the highest priced plums—so large that they are one of the few varieties in this district which are wrapped in papers and shipped in peach boxes. The second row from the Climax has not such a heavy crop, the third row does not usually need hand thinning, and the rest approach the condition complained of.

So strongly do Taylor brothers believe in the Wickson when pollenized by Climax that in the new orchard planted three years ago are 300 Wicksons alternated with 800 Climax, one row to three. These trees were budded in the nursery three years ago last summer, were set out the following winter, and bore a considerable crop last season. The 150 old trees average about 600 crates per year.

A. T. Chute has 100 Wicksons next to 100 Climax and gets two to four crates of high-priced fruit per year per tree. As he says, "A well fed tree can always stand harder usage," and he puts 100 yards of barnyard manure per year on his 55-acre orchard, be-

sides encouraging the burr clover growth for green manure. Mr. Taylor also fertilizes a third of his orchard every year with barnyard manure besides letting stray patches of burr clover grow all summer for seed. Neither Chute nor Taylor cultivates during winter.

RABBIT INJURIES TO YOUNG TREES.

To the Editor: Is there any way to save young fruit trees after they have been badly gnawed by rabbits, and what is the best way to protect trees from being injured by rabbits?—A SUBSCRIBER.

[Cover the wounds with grafting wax or bind with burlap inclosing a poultice made of clay and cow manure which will keep the surface from drying until the remaining granules of bark tissue start to growing over the bare places. Rabbits do not usually clean off bark as gophers do, therefore it has a better chance to grow over.

To repel rabbits rub the bark with a stinking carcass of one which you open for that purpose. Or whitewash with lime into which you have mixed stinking tallow while slacking; or apply a wash of commercial aloes. 4 oz. to one gallon of water.—EDITOR.]

F. H. WILSON, President.
CHAS. A. CHAMBERS, Secretary.

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California Fruit Planters have considered our firm one of the Most Reliable Concerns to deal with. Headquarters for

FRUIT Trees—

All Kinds.

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All Varieties.

Send your list of wants for quotations. Price List and Information Free. Our Stock Guaranteed

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Gives a history of the industry and valuable data on planting, pruning, harvesting, drying, etc. Write for a copy.

Remember, we grow everything that grows—fruit and ornamental. Illustrated catalog pricing 2000 varieties sent free on request.

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Paid up Capital \$200,000.
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1,000,000 Rooted Olive Trees

MISSION, MANZANILLO, ASCOLANO AND SEVILLANO VARIETIES.

Our cuttings are taken from the finest bearing orchards in Southern California and are absolutely clean.

We also have some first-class selected bud orange trees and a nice line of rose bushes. For particulars and prices address

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Tetley Block, Riverside, Cal.

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An opportunity for intending planters. Special low rates. Write for prices now. Owner wishes to sell off in a short time.

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Melons, Corn, Cucumbers and Tomatoes started in Bands, your garden will be one month earlier.

Samples by prepaid parcel post. 100

2-inch, 60 3-inch or 30 4-inch for 30

cents. Write for prices on large lots.

PANAMA-PACIFIC SUPPLY CO.

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Successful Farmer's Buying Club.

Co-operative buying of practically all supplies for a farmer membership of 195, with no capital invested, is an assured success in the case of the Ukiah Farmers' Club, Inc. Secretary C. A. Bernhard has recently made his second annual report to the directors, showing gross sales of \$74,000 handled at a total expense of only 6%. The club was organized three years ago and later incorporated for \$25,000, none of which was to be paid in, but all of which constitutes a liability against the members should things go wrong. This enabled members to enroll without investment other than a nominal fee. Business was done on a \$5000 loan obtained on the club's notes from its own members only. This was possible because business is done on a cash basis, 2% additional being charged to members on credit sales.

Despite bitter opposition of local merchants whose profits have been seriously reduced, and despite the unwillingness of wholesalers to supply the goods, the club last July bought its \$10,000 warehouse in Ukiah and claims half the ranchers of that valley as members besides reaching out into neighboring valleys. The warehouse, 60 feet by 208, is full of goods; wholesalers now come to the manager seeking business; members and even outsiders from all the countryside phone or bring their orders for supplies. Small buys are discouraged, anything that will not readily spoil is sold in original packages with less expense than would be required to break the package and make a single small sale.

The Farmers' Club's operating expenses for 1913 were 6% of the cost of the supplies; and out of this, over \$1300 was set aside as a sinking fund after paying 8% interest on the \$5000 borrowed.

This means that when the manager buys a dollar's worth of goods from the wholesaler, he adds 6% to the price and then adds its share of the freight. The sum is its selling price to members. To non-members, the price is usually made by adding 10%; and a great deal is sold at that since it is often still below the local merchants' prices.

In order to join the club, every candidate must satisfy the membership committee of all of three requirements: (1) that he is honest and pays his debts; (2) that he is able to pay his debts; (3) that he can pay an assessment of \$300 should that become necessary.

It was about three years ago that C. A. Bernhard, teaching in the Ukiah schools, suggested to his teachers that cooperative buying ought to reduce the high cost of living and a Farmers' Institute ought to discuss the question. While he was talking, an influential friend consented to call a meeting to get a Farmers' Institute. Twelve farmers and three teachers responded and issued a call for a second meeting at which they organized with about 40 farmers. Things moved along six or eight months during which there arose a demand that the organization buy feedstuffs, etc., in quantities to sell to the members at cost. Finally the Ukiah Farmers' Club was organized with Mr. Bernhard as secretary-manager, and incorporated under the Co-operative Business Association law of California.

The success of the club is very largely due to the loyal support of the directors, according to Mr. Bernhard,

and he wishes to emphasize the remarks made to the stockholders at the first election of directors:

"Don't let religion, politics, friendship, or anything else influence you in your vote for a single director, except pure, cold-blooded business."

The instability of co-operative organization is mostly due to the ignoring of this advice. Lack of business methods in the management of any enterprise generates suspicion, distrust, lack of support, and speedy dissolution.

The local merchants were up in arms. They secured Mr. Bernhard's removal from the school, and when vacation days came he said he was accustomed to no salary in July and August; he would donate his services to the club if they would stand by him; and on September 1 he would name a salary for future work. This farmers' club paid its manager through the following year \$150 per month, and raised it \$25 for the second year. Here is where many such organizations fail. They hope to get a manager at \$100 or less, and are dissatisfied if they pay more.

It was a fight from the start. A warehouse was needed, but every available piece of land was held in option by the merchants or their friends. Finally a warehouse owned by A. W. Foster was leased for a year at \$40 per month. At the end of the year Mr. Foster thought \$80 to \$100 would be a fair rental for the next lease.

Mr. Bernhard astonished him by asking what he would sell for. The price of \$10,000 was borrowed partly from members on the club's notes at 8% and partly from the bank on first mortgage, so that the warehouse is now their own.

On the other hand, it was nearly impossible at first to buy from the wholesalers, who had been threatened with loss of business if they should sell to the Club. Anyhow, the little office did not inspire confidence in traveling salesmen, and the limited borrowed capital could not talk very loudly.

Finally H. C. Shaw & Co. of Stockton agreed to sell hardware and implements at the risk of loss of other trade, provided the club would not turn them down when more prosperous days should come. Then another company sold Mr. Bernhard some flour, and the semblance of business led another to send him a carload of cement. An irrigating engine company had been unable to sell gas engines in that territory, so they asked the club to be their agents. Next, arrangements were made with the central Rochdale store in San Francisco for groceries.

By this time, other wholesalers had lost their fear of the local merchants, and thereafter things have come easy for the Club.

To avoid large investment, only samples of costly farm machinery are kept in stock. In urgent need, a member may buy a sample, but they understand that they are usually to wait a week or so. But some machinery is now received on consignment, which helps.

Already the co-operative idea is spreading to other lines. The Club is handling much of the insurance of its members. It has built a hundred miles of telephone which is connected

with the Pacific telephone at a cost of \$18 a year for a five-party line. Each farmer subscriber keeps the line in repair to his next neighbor. Co-operation in building it is due to the Club. Of the five hardware dealers, some are thinking of going out of business, but, as Mr. Bernhard asks,

"Why should the farmers be taxed to make life easy for the merchants?"

Five hundred acres of sweet potatoes will be grown this year on the ranch of the Turlock Produce Co. Other extensive plantings will be made in this section.

Lays its own track and rolls over it

Can not slip
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Place a board over a mudhole. It will hold you up—if it's long enough and wide enough. The Caterpillar tracks hold the Caterpillar up—on any soil, wet or loose or sandy. It is all a question of area—traction surface.

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The 1914 60 h. p. Caterpillar is guaranteed to do the work of 32 good-sized horses. Every part is carefully inspected. From foundry to paint shop, nothing is overlooked that will prevent delays in the field. Forty-three years of manufacturing experience have taught us to be thorough.

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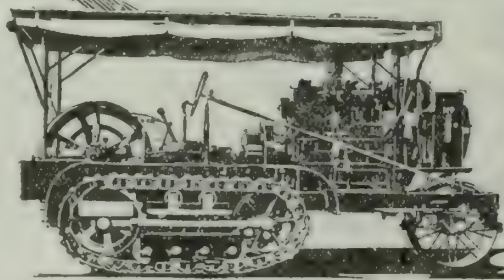
The Caterpillar is built in three sizes, 30, 60 and 75-h. p. We furnish nearly everything for the farm—plows, disc harrows, harvesters and scrapers—all strongly built for tractor work.

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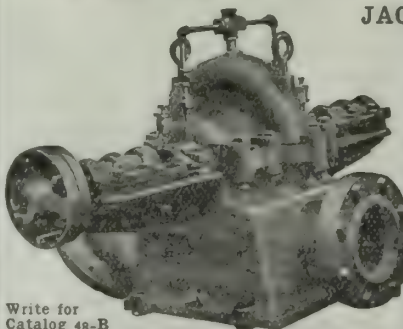
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The King Road Drag.

[Written for the PACIFIC RURAL PRESS
by W. D. GUTHRIE.]

Several days ago I drove along Kearney boulevard, near Fresno, and found that part of this road, because of the continuous rains, had become almost impassable. Ruts were a foot deep and the once splendid boulevard was a regular mire in places. The autos were seeking the bicycle path at the side. A few days later, I again had occasion to pass along that same way and saw a team hitched to a railroad tie at work smoothing down the road, filling up the ruts and holes. If the boulevard had not been shaded, it would have been only a little while until it was again in its usual good shape.

This incident reminded me of the road drag I used to use back in southwestern Iowa. I have often wondered why they have not come in use here as well. We certainly have enough Eastern people here who not only know of the benefits of their use, but many have used them as well.

It was not so very long ago that whenever we picked up an agricultural paper one or more articles on the use and advantage of the split-log road drag would confront us. Now, however, we seldom see an article on this subject. This does not mean that the use of the road drag has been discontinued, but just the opposite. Everybody is using it and so it needs no more boosting back East. Yes, the old split-log drag is being used more today than ever before. It has changed its appearance somewhat. Instead of a roughly constructed affair costing only a few dollars and made by the owner himself, you now see nicely toned and braced drags, made by the village blacksmith, costing from \$5 to \$10. Or you can go to the implement dealer and pay \$15 or more for a nicely painted drag made entirely of iron with levers to adjust it. But when you come to use them you will find that the old split-log drag, made from an old oak tree, does just as good work as either of the others.

How KING BEGAN.—Most of those who read this know what a road drag is and how it is used. But for those who do not, I will give a very brief description of how Mr. King, the originator of the road drag, made the first split-log road drag. Mr. King took an old oak log, 8 feet long, 10 inches in diameter, and split it in the middle. Then he bored three 2-inch holes in each half at right angles with the flat side and equal distance from each edge, one at each end and one in the middle. Then he took three 3-foot hickory sticks and fitted one end in the holes in one-half of the log and the other end into the corresponding holes in the other half. The flat face of each must face the same way; this is the front side of the drag. The bottom edge of the front log was ironed with $\frac{1}{4}$ inch by 3 inches wide. This gives the drag a better cutting edge and consequently will move more dirt. An iron hook was fixed in the face of the first log 18 inches from the end. Into this a chain was fastened, the other end being fastened to the hickory round. The chain pulled over the top of the split log at this end and held it to the ground. The team was hooked on to the chain, so that the end of the drag just mentioned would run about two feet ahead of the other end. This shoved, as the drag moved

forward, all the dirt toward the center of the road. Mr. King always rode the drag and so was able to guide its course by changing his position.

How KING USED HIS DRAG.—Mr. King used this drag on one mile of the road that ran by his farm toward town, which had been almost impassable and was considered the worst in the county. A few years later it was the best in that part of Missouri. He first dragged the road to fill in the ruts, then he dragged after each rain. He kept eternally after it, always moving the dirt toward the center. This kept the road smooth, and the wagons, instead of following one track and making ruts, traveled all over the road. Thus the entire surface of the road was rolled, and the dirt being moved toward the center in small amounts was thoroughly packed. Mr. King has worked this road until it is the shape of a saucer, consequently when the rains come, as there are no holes or ruts, there is nothing left for the water to do but to run off, and so in just a little while the road is dry again.

FOR CALIFORNIA.—In California we don't have as bad roads as Missouri used to have, but there are times of the year, and especially so in a season like this, when we have had lots of rain, that the roads in certain sections of the State where the soil is mostly adobe, get into awfully bad shape. The first thing to do is to make a road drag or have one made: 2 by 12 plank can be used in place of the split log, and 2 by 4 will take the place of the hickory sticks. Place these 2 by 4 pieces across the top of the plank and run iron braces to the lower edge of the 2 by 12, so it won't split. Put the iron shoe on in the same way as described before. Fasten the chain on in the same way. The next thing is to hitch on to it and go to work. It is much better if the road has been graded first, but if it has not, and you can't get the road boss to do it, take and plow a furrow on each side of the road, then hook on to the drag and work this up to the center. Now plow another furrow and work that in and you will soon be surprised how quickly you have got the road in shape. Drag it after each rain while the ground is still wet. This puddles the soil and makes it impervious to water.

Most of us feel that we pay enough road tax to keep all roads in shape, but under our present system it is impossible for the road boss to drag all the roads in his territory after each rain. Besides, if we each help a little to keep the roads in shape, we will not only have better roads, but we will have more money to spend in building concrete bridges and other permanent improvements.

POTATO GROWING.

To the Editor: Will you advise me as to the best time to plant early potatoes, the proper kind of care to give them, and also the variety to plant? The land I wish to put into potatoes is rather of a sandy loam and has been left to sod for five or six years. It was plowed up last year and no crop planted. Do you think I need to work manure into the ground? How deep do you advise planting the potatoes and how far apart should the hills be? How many times do you think they should be

irrigated and cultivated?—R. G. W., Visalia.

[For early potatoes, if your place is out of hard freezing, you ought to have the potatoes up and growing before this. In low places, later planting should be done, but the potato will stand some frost and the way to get a crop in the drier parts of the State is to plant early and secure a lot of top growth before the rains are over. Plant as soon as the land is in good condition, is the best advice we can give you now. You do not need any fertilizers for the first crop on such land as you describe: especially do not work any coarse manure into a sandy soil as late in

the season as this: plow it in in the fall. As late as this also, on a sandy soil, you can safely cover about six inches: dropping about a foot apart in furrows three feet apart so as to keep well cultivated one way. Do not hill potatoes in such soil: keep up good flat cultivation. If you need irrigation, run water down the rows as often as needed to keep the soil fairly moist: do not let it get dry and then irrigate or you are apt to spoil the crop. If you are new to potato growing, you ought not to risk much without studying a full account of local methods as given in our book on "California Vegetables."—EDITOR.]

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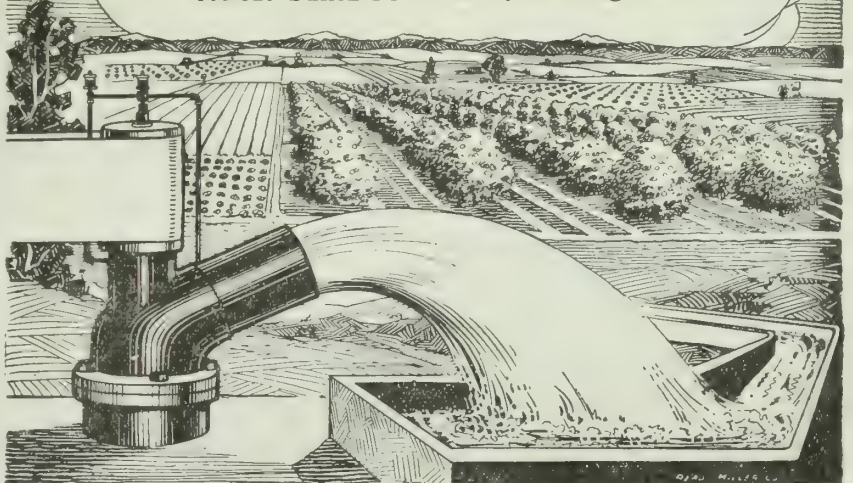
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AGRICULTURAL REVIEW.

Australians Raise More Grain.

Grain exports from Australia have more than doubled in the past five years according to M. H. East of Adelaide, who says this is largely due to the subdivision of large estates and the desirable immigration this has attracted. Last year 95,000, mostly American, English, and German settlers went to Australia.

Bush and Pryor are sowing 200 acres of grain every twenty-four hours in the Corcoran district, Kings county.

Sutter county beet land of last year has mostly been seeded to grain this spring with the aid of big tractors. Six hundred acres of the Noyes ranch have been seeded, using a 75 hp. caterpillar, night and day to pull twelve plows with harrows and seeder attached.

Vegetables and Berries.

Sixty acres of beans are to be planted by Henry Hanson of Fresno county under direction of a specialist from Los Angeles.

A cluster of Loganberries green and ripe with a few blossoms, was brought into Healdsburg in February. Loganberries yield about four tons per acre, selling at \$80 per ton to Sonoma county canneries. Dried Logans are also coming into favor.

Peanut growing is no longer profitable in California, due to the cheapness of the Japanese and Chinese product, according to C. E. Utt who once was the "peanut king" of Orange county.

Mexican tomatoes now on the Stockton market are of good size and seem as firm as if fresh picked.

Fruit Disease Troubles.

Official quarantine against California potatoes in Idaho has recently been declared, and the Western Washington Horticultural Association has asked that State to do likewise. The trouble is the potato tuber moth. Let's kill it.

Idaho has also quarantined against California pear nursery stock on account of pear thrips.

A U. S. government entomologist has made his headquarters at San Jose to furnish growers information as to when and what to spray. The moist winter favored the chance for large numbers of thrips to appear this season. The same is true of peach curl leaf.

Fighting the pear blight is on in earnest now in the Lodi fruit district. The remedy is to cut it out.

Small lots of plants brought from foreign shores have heretofore been passed as baggage without inspection for pests as required by the U. S. plant quarantine act. Collector of Customs Davis issued orders the other day that all such must be certified free from disease or pest by State quarantine inspectors. This is of vital importance to California farmers. Nursery stock of all kinds from trees to buds are not to be mailed into Canada.

Added quarantine of Hawaiian fruit will be considered at a hearing called for March 19, by Secretary Houston on account of the menace of the Mediterranean fruit fly.

Dairy Cows Hard to Get.

Dairy cows for sale are scarce in Fresno county and the demand is heavy especially in the Tranquility

section. D. Brown will build a 275-ton silo this season and if possible, get a dairy herd to use the entire forage crop on the ranch. Mrs. Colby is building extensively for dairying. Many artesian wells have been sunk 700 to 850 feet and are flowing freely with good water.

Raisin and Table Grape Notes.

Fifty thousand tons of raisins have been shipped since Sept. 1, 1913, by the Associated Raisin Co., the co-operative organization of Fresno. Other packers are said to have less than 1000 tons on hand while the Associated has 26,000 tons, which is 10,000 tons less than at this period last year and eastern stocks are short.

Raisin Day boosting has started. The campaign will cost \$5000 to \$10,000.

Concentration of raisin packing at Fresno is causing much protest from surrounding towns.

The California Wine Association is to meet competition from Ohio wine men, who plan to establish a winery in Fresno county.

Figs Being Contracted.

Fresno county 1914 figs are being contracted at 3 3/4 cents. Over a hundred tons having been purchased last week.

Large Horse Importation.

A large importation of Percheron stallions direct from France reached the McLaughlin Percheron Co. at Oakland last Tuesday. They are nearly all coming three years old and are especially heavy animals. Two Belgian stallions, the highest priced horses imported in the last decade, according to Secretary C. H. Alexander, are included in the shipment.

Good Market for Horses.

German importers will purchase 10,000 horses for the German army this summer and fall, according to Consul General R. P. Skinner. Freight rates from America are lower now than heretofore.

Dried Fruit Demand.

Consular reports on dried fruit indicate that the German demand will fall to some extent this year.

Dried peaches are the cheapest dried fruits in eastern markets. Prices to the driers were steady last month at 4 cents with some prospect of a rise.

Better Management of State Ranches.

A dispatch from Sacramento states that Dean T. F. Hunt of the California College of Agriculture has become supervising and consulting manager of the 9000 tillable acres of the State ranches around the prisons and asylums.

More Small Farms.

The last 4000 acres of the 16,000-acre Dickenson ranch in Stanislaus county has just been sold. It will be subdivided into half section lots or larger for grain and stock. In Yolo county the Lowe and the Craig estates have recently been cut into small farms to attract settlers.

Successful Season at Vina Ranch.

While in the city recently, W. G. Stimmel, superintendent of the great Vina ranch, stated that progress was

being made all along the line, and especially so in stock and general farming. Last year proved very successful financially, the balance sheet showing a good net balance over the usual expenses and some extras for putting a permanent dam, for improving the dairy and extra work

along fruit lines. The ranch has just purchased its third caterpillar tractor.

Mr. Stimmel stated that the large herd of sheep, about 11,000 head, was gradually being bred over to the mutation type. The last lambing season, closed about three months ago, was very successful, as they saved nearly



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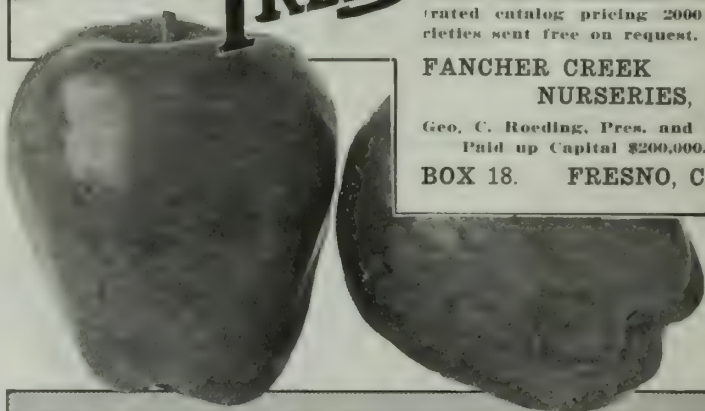
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100% in spite of the heavy rains. This record was made by having plenty of sheds and hay. The ranch will soon sell a lot of three months old lambs for butchering for which it expects to receive from \$3.50 to \$3.75 per head.

Heavy rains this winter have caused some damage. The third flood of the season covered part of the ranch the first of this week.

Citrus and Olive Notes.

Santa Clara county for lemon culture, either dry or irrigated, is being boosted.

A 100-acre grapefruit grove to be planted in Riverside county will be one of the largest in the world.

Young orange groves near Pomona suffered from the recent storms. Otherwise little damage was done to orange growers.

Fruit and Ornamental Plantings.

Nursery trees to plant nearly 2000 acres have been inspected by Sacramento county horticultural commissioner F. R. M. Bloomer, for planting largely in the island district. Pears, peaches, and plums are favorites in the order named, with prunes and almonds close followers.

Merced county is planning to spend over \$40,000 for shade trees along both sides of the State highway for 36 miles.

Three hundred ornamental trees of twenty-two varieties have been brought from the mountains for planting in the new county park near Visalia.

English walnuts are being used for border shade trees in one section of Stockton.

Several tons of olive seeds are to be planted and 10,000 olive cuttings are to be rooted this spring in a Butte county nursery.

Eight or ten carloads of nursery stock are going out of Fresno every day.

Olive, orange, lemon, and pomelo trees will be planted in a narrow strip of the Orland project from the railroad to the State highway.

Sixty thousand almond trees were shipped into Colusa county this winter. Over a thousand acres of almonds were planted about Chico last winter.

Country roads leading into Suisun, Solano county are to have shade trees planted by the Civic Center Association.

Several "Ahorn" and "Flame" trees from Switzerland have been donated to Riverside, by H. D. Adsit. The leaves of the former are white; those of the latter are fire red.

A few alligator pear trees have been planted in Sutter county.

Five hundred of each of ten varieties of rose bushes have been ordered for distribution by the Beautification Committee of Riverside.

Corn Here and in Mexico.

Egyptian corn will be planted on 480 acres of Fresno county land.

Corn is to be admitted free into Mexico until June 30, and an export duty has been placed on domestic stock in the State of Coahuila.

Berry and Apple Growers to Combine.

A combination of the Sebastopol Apple and Berry Growers' organizations of Sonoma county is soon to be effected if plans on which their directors are now working can be carried out. The Berry Growers' Asso-

ciation numbers 286 members. Their berry business amounted last year to about \$93,500.

Wine Growers Fight Prohibition.

The vigor of the anti-liquor forces is being reflected by the organizations of wine growers all over the State. It is claimed that the raisin and table grape growers would be ruined by the proposed amendment because there would not be the wine outlet for their surplus.

Tractor Exhibitions.

The Fresno tractor exhibition yielded to the weatherman. A demonstration of like nature is planned at Marysville for March 5, 6, and 7.

A Co-operative City.

Lindsay, Tulare county is thoroughly trying out the co-operation idea. Olive and orange growers have new and separate organizations and the dairymen will co-operate in a creamery.

Beekeepers Meet.

The Riverside County Beekeepers' Association met February 15 to discuss marketing methods and co-operative buying. Bees are sent by parcels post in 1½ pound packages.

Washington Apple Growers.

The Wenatchee (Wash.) North Central Fruit Distributors have paid to members for the past apple crop \$228,000, an average of \$1.125 net to the grower for all grades and varieties. Final payment has not been made on any variety.

BLOOD PLUMS AND BOILED RADISHES.

To the Editor: Will you kindly tell me if plums can be satisfactorily grafted upon peaches or almonds? We have 30 or 40 almond and peach trees that are either barren or produce such inferior fruit that it is worthless for any purpose. The almonds, although covered with bloom every spring, seldom produce a pound of nuts. The ground has been very heavily manured three successive years, but the nuts drop when very small. We have a plum which is called by a neighbor "the blood plum." It is a deep red clear through to the pit. In shape it is round and about as large as a Royal apricot. The flavor is most delicious and it readily brings 5 cents per pound in the local market. Therefore we thought if it is practicable, to graft the worthless trees to this blood plum we would do so. When would be the best time to graft the almond or the peach trees?

[The Blood Plums often sell very well in small quantities in local markets, but they are not safe for commercial ventures. Most plums will graft well on both peach and almond, but you must watch the waxing. The peach bark, particularly, is disposed to shrink back on drying. The grafting should be done right away.—Editor.]

BOILED RADISHES.—This winter we sowed a lot of radish seeds of the Long Scarlet variety between rows of dwarf peas, expecting to find a ready sale for them, but no one seems to care for the long radishes, although they are very tender and crisp. We therefore were constrained to find some way of disposing of them. The

horses would have none of them; the cows were not hankering after them; the turkeys would eat the tops and some of the roots, as also will the poultry. The writer therefore suggested that the cook should peel and boil them to test their edibility as a substitute for white turnips. The experiment was an agreeable surprise, as the radishes were of an excellent flavor, superior to the common white turnip, which takes a much longer time to grow.

These radishes are as large as car-

rots, being about 1½ inches in diameter and about 6 to 8 inches long; solid and crisp, but just beginning to get keen. Peeling removes this, however, making the cooked vegetable very palatable and a valuable addition to the winter's bill of fare.

WILD GREENS.—As a substitute for spinach we find the tops of the wild turnip (a weed that comes in grain fed to the fowls; the root is of the cowhorn variety) an improvement on wild mustard.—SAMUEL HAIGH, San Jose.

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Economical Sanitation on the Dairy.

Practical dairymen often question the advisability of expensive buildings and equipment as they have claimed the added expense was not warranted by the extra price paid for their product.

Those that have had charge of the large city milk markets have been especially keen in their demands upon the dairymen in regard to the sanitary quality of milk that can be secured only by expenditure of money and by added labor in stable and milk room.

Just which points are most essential in producing milk with a small germ content has been interestingly set forth in Bulletin 365 of the New York Agricultural Experiment Station, which will very likely be of value to many of our dairymen who are endeavoring to produce high-class milk.

CONDITIONS OF THE TEST.—Study of some of the points here discussed began about five years ago and each test was continued long enough to obtain accurate results independent of accidental variations. In all the tests, small-top pails were used. In each case where only one cow was milked into a pail, the pail was thoroughly cleansed and sterilized in the dairy room about twenty rods from the barn and was protected with a cloth over the top during the sterilization, this cloth not being removed until the pail was handed to the milker. In this way considerable contamination of the milk was avoided. In a preliminary test, three milkings of each of four cows were compared, pails thus protected by cloth and other pails similarly cleansed and sterilized, but not protected by the cloth while being taken from the milk room to the barn. The protected and unprotected pails were used alternately on the same cow by the same milker and all other necessary precautions were adopted to make the comparison show only the effect of the cloth protector. The average germ content shown in the protected pail was about 900 germs per unit, while that in the unprotected pails was 160 per ct. greater, being about 2400. This protection of the pails seemed of decided advantage in eliminating a source of error in the experiment and might be a wise precaution in practical dairy work. However, the influence of the protection would rapidly decrease with successive milkings into the same pail.

In taking samples, the milk from each cow was thoroughly stirred with a sterile spoon and the necessary amount taken by means of the same spoon.

PLASTERING AND WHITEWASHING THE STABLE.—When the Station barn was constructed in 1904, the cow stable was ceiled at the top and sides with planed, beaded, matched southern pine, which was finished with a coat of oil and shellac in accordance with accepted dairy construction at the time. Modern sanitarians find fault with this finishing of the stable since the joints and beading of the wood allow considerable accumulation of dust, and they usually recommend the use of lath and cement. This gives a tight ceiling and a smooth finish to which little dust can cling. In these stables, also, the stanchions are not of the type now most highly recommended, as they lack a little in sim-

plicity and afford many places for the lodgment of dust. In order to contrast the effect of this older construction under favorable conditions with the newer construction at its best, dust was allowed to accumulate on walls, ledges and stanchions until these were in as bad a condition as would be tolerated under reasonably good barn management. The germ content of the milk of six cows, well distributed about the stable, was now determined at each of six milkings, three cows being milked by two men, each milker using the same pail. The interior of the stable was then thoroughly renovated, the ceiling and walls down to within three feet of the floor were covered with wire lath with two coats of cement and the area between the cement and the floor was covered with zinc. After the plastering had been finished, the stanchions, floors and mangers were thoroughly cleaned, thus putting the stable in excellent sanitary condition. As soon as the barn was in order, the germ content of the milk from the same six cows was again ascertained on six days. Soon after this test was completed, the wood work and iron work of the stable were painted. When the stable was again ready for use, the germ content of the milk of the same cows was again determined. The results from the 212 milk samples show no measurable effect from the change in barn conditions. Taking as a basis the results obtained in the dirty barn before plastering, the milk obtained after the barn had been freshly plastered and cleaned showed an increase in germ content of 114 germs per unit, while later, when the wood work and stanchions had received a coat of paint, the germ content was 119 per unit less than when the barn was at its worst.

A little more than a year after this renovation of the stable, samples were again taken as before and their germ content carefully determined. The plaster, wall and ceiling of the stable were then whitewashed and the wood work freshly painted, after which other samples were collected from cows milked under these supposedly improved conditions. As before, the two groups of samples showed little difference in the bacterial content of the milk examined. The average results differed by only 240 germs per unit, with the advantage, if any, in favor of the milk produced before the whitewashing and repainting. These results were so close that no one would be justified in assuming that the data show whitewashing to be an unsanitary practice and calculated to increase the germ content; on the other hand, they offer no support for the common notion that whitewashing of the stable is an important sanitary practice with a strong influence upon the quality of the milk.

CLIPPING COWS.—Another dairy practice strongly recommended where clean milk is desired is the clipping of the flanks, udders and part of the tails of cows. Theoretically, this seems a most excellent practice, well adapted to facilitate easy and thorough cleaning of the cow before milking, and the results from the tests of the practice made in our stable were decidedly surprising to the investigators. In this test the general averages appear to show that clipping increased

the germ content of the milk, but as the majority of the germs on this side of the test came from one cow on one particular day, too much weight can not be placed on the results. If this particular observation be omitted, the results incline slightly to the other side of the test, that is, in favor of clipping.

In a later test, 22 samples were collected in the regular way from the milk of each of four cows from which bacterial cultures were made and plates counted as in the other tests. The udder, the flank up to the hip joint, and the tail above the brush were then clipped on each of the cows

and a few days later, 24 samples from each cow were collected and tested as before. The average germ content of the 88 samples of milk from the unclipped cows was 204 per unit, or, excluding the normal udder content as determined by the strippings, 133 germs per unit. After clipping, the general average was 320 germs per unit from the clipped cows, or excluding the average udder content, 208 germs. These quite extensive measurements give an average of about 75 more germs in the milk of the cows after they had been clipped than before. This would seem to indicate that clipping cows increases, rather

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than decreases, the probability of germs finding their way into the milk during the milking process.

In large dairies, use of the milking machine may reduce the labor cost of milking while the germ content of machine-drawn milk—the measure of cleanliness in its production—may be held at a low point if a few simple, inexpensive precautions are observed. In smaller dairies where use of the machine is not practicable, the substitution of the small-top pail for the type in common use will shut out one-half or more of the dirt and germs that make milk impure without noticeably increasing outlay or labor.

Care in handling the milking machine and use of the small-top pail are practical sanitary measures which return marked results for the money and time expended.

WHEN DO BACTERIA ENTER THE MILK?—In all of these tests the bacterial counts of the milk as drawn were very low and changes in stable conditions seemed to exert no measurable influence upon the number of these organisms present. This raised the question as to what are the important sources of bacteria in milk.

Accordingly, on 17 days the germ content of a pail of milk was followed from the cow through the various operations in preparing it for the consumer. At the Station, the milk is taken to a small milk room, separated from the stable by a single door, poured over an aerating cooler, collected in a second pail and taken in this to the dairy. Here it is passed through a cloth strainer into a third pail in which it is placed in cold water until needed. All these utensils are cleaned with hot water and sal soda and treated for ten to fifteen minutes in a steam box. The cooler was not protected in any special manner during use, though the milk room was kept moderately clean.

Samples were taken which represent the strippings, and the milk in the pail, after leaving the cooler, after arriving at the dairy, and after straining into the final can. On all of these days except two, the germ content of the milk at every stage was very low, the averages for the entire period showing 57 bacteria per unit in the strippings, 161 for the milk in the pail, 426 after cooling, 443 when it reached the dairy, and 474 after it had been strained. On two days there was apparently some slight contamination of the milk during cooling, but even then it had a germ content which was surprisingly low. These figures were obtained when the dairy operations were all conducted in the ordinary way and show that with reasonably careful handling in a moderately clean stable and clean dairy room, the germ content of the milk can be kept low without special elaborate precautions. The small count throughout in this particular case was due to the fact that the milk was furnished by one cow which had a rather low udder content.

It is common in discussions of the sanitary quality of milk to use, as a general standard, a germ content of 10,000 germs per unit as insuring a milk which is above suspicion of uncleanness. In obtaining milk which shall be safely below this 10,000 limit, it is the custom to spend much labor in washing the cows and in keeping the interior of the barn scrupulously clean. In all of the tests discussed in this bulletin, the germ content has been very low, seldom exceeding 1000

germs per unit of which number about one-half are germs normally present in the udders of the cows.

That milk of this quality is not uniformly produced under such general conditions is illustrated by the fact that a local commercial dairy in which the methods and equipment resemble those at the Experiment Station, except that steam is not available for treating the utensils, quite uniformly turns out a product with a content approximating 1,000,000 germs per unit.

What, then, is the difference between these two dairies? At the Station the stable is kept cleaner, the cows are much cleaner, the milkers are cleaner, and the utensils are thoroughly steamed. Apparently the wide difference in the germ of the product from the two dairies lies in the influence of one or more of these factors.

A FEW HOGS WITH FRUIT.

[Written for the PACIFIC RURAL PRESS.]

In a great many of our larger fruit-growing sections, there is more or less acreage that for various reasons cannot be profitably farmed to fruit. Some growers make use of such land by raising a crop of grain hay, while many do not derive much if any benefit from it.

A more profitable way than either of the above was recently seen on the ranch owned by R. J. Merrill and son, near Morgan Hill, Santa Clara county. Being in the heart of a fruit country, most of the land on this place is planted to trees and vines, but there was a part of the ranch which partly overflows in the winter. Instead of allowing that land to go to waste, it has been utilized for hog houses and pasture, and quite profitably, too.

Pure-bred Berkshires are kept, and by purchasing some mill feeds in the winter, it has been found that a small herd can be kept with very little expense. The plan used is to feed dairy chops and chopped alfalfa during the winter months, when other feed is scarce. As soon as the fruit starts to ripen, the pigs are turned loose in the orchards, where they are able to rustle a good living from the droppings, which would otherwise be wasted. After the picking season starts the herd is fed on the culls and other refuse, which are generally thrown away.

While it would doubtless pay to raise well bred grades in this way, the owners state they have found that more money can be made by raising pure-breds, and are aiming to keep their herd high in quality on account of their only being able to maintain a small bunch. If all fruit-growers would grow a few well bred hogs instead of scrubs, or none at all, they would very likely find them a profitable side line.

RAISING RANGE BULLS.

[Written for the PACIFIC RURAL PRESS.]

There is a growing tendency on the part of cattle men, to use better bred bulls on the range, but it very often happens that the range is a considerable distance from the breeding centers. So, instead of going to the trouble and expense of getting good bulls from a reputable breeder, good looking scrub stock is purchased, and as a consequence very little advancement is made.

A simple and inexpensive way of overcoming this is being undertaken by Phil Collins, of Monterey county,

who has large cattle interests in that section.

Heretofore good bulls have been hard to secure even at considerable expense. So when an opportunity was offered this year, by the Jacks Corporation, to buy some pure-bred Hereford cows, Mr. Collins purchased a few which will be used entirely to supply bulls for his range cattle.

The expense of maintaining this small herd will not be very large, as aside from their feed only one new bull will have to be purchased about every two or three years.

The results, however, will be big. In a few years enough of a selection will be possible, to breed from the choicest bulls only, and instead of spending money for freight every year, the bulls will be taken directly from the ranch to the range.

Where location almost prohibits shipping bulls, as many of our cattle districts do, this looks like a paying

proposition and will likely become a more general practice.

PREVENT GREED IN HOGS.

What is the best way to feed hogs so that each one can get its share when you have to feed a large number together?—A SUBSCRIBER.

[We only know the old way of bars on the troughs so only one head can get in at a place. Who knows better ways?—EDITOR.]

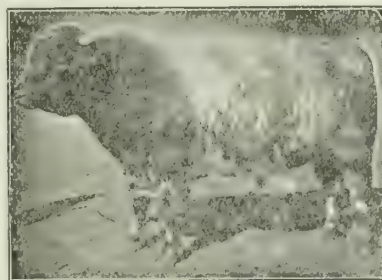
THE PINK BEAN.

To the Editor: What variety of bean, of commercial value, will best cope with the hot, dry winds of this section, when planted between rows of young trees? I have ample water for irrigation.—D. T., Patterson.

[In the interior valley, away from the moist river lands, the pink bean is chiefly grown and found best suited to the conditions.—EDITOR.]

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.



KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

BREEDER OF

SHORT-HORN CATTLE SHROPSHIRE and MERINO SHEEP

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or ear-load lots.

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

A. W. MORRIS & SONS CORP.

Holstein-Friesian Cattle

Woodland, Cal.

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.



REGISTERED JACKS

12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

JAS. W. McCORD, Hanford, Cal.
Residence, 508 N. Dooty St.
Phone 471-J.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

With the Live Stock Men.

A. B. Spooner, the owner of Pecho ranch of over 7000 acres near San Luis Obispo, was in San Francisco last week, looking for a string of good Holstein cows to add to his dairy. Besides his dairy, Mr. Spooner has a large herd of beef cattle, also turns off about 300 head of hogs annually. Not quite satisfied with the stock game he seeds 1000 acres to grain, and between times gathers tons of abalone shells from the tide lands fronting his ranch.

The first consignment auction sale of pure-bred Jerseys in California to be held April 2, on the G. O. Hillier Jersey farm, Modesto, is announced in a hundred-page illustrated catalogue just received at our office. Pedigrees are given for the animals offered by Messrs. G. O. Hillier, J. N. Lester, W. A. Bradley, and R. L. Waltz.

Glenn county reports horses of that section suffering from some form of poisoning which makes them drowsy and stiff, having tremors and losing flesh quickly.

A bill passed Congress last week appropriating \$500,000 to fight hog cholera and horse dourine.

Two carloads of California pure-bred Holsteins have recently been shipped into Corcoran by Geo. A. Smith, who expects soon to import several carloads from the East. He wants to make Corcoran a widely known Holstein center.

W. E. Pierce of Stockton, an importer of Australian beef, believes that beef prices must soon go down.

Twenty-two Holstein cows and fourteen heifers were recently bought by A. M. Borba for his alfalfa dairy ranch in Glenn county.

Richard Hamby, of Monterey county, has sold his 3000-acre stock ranch to J. S. Woodman of Paso Robles, and will now take up the real estate business.

J. H. Mackenzie of Yuba City, has sold his pure-bred Guernsey herd to the University of California. Official records will now be taken.

Arthur Hebborn shipped a carload of dairy cows, many pure-bred, from Salinas last week to buyers at King City.

Nineteen carloads of beef cattle were shipped from Salinas last week to San Francisco. Miller & Lux, and Bardin Bros. were the shippers.

Forty acres of the old Castle ranch in Tulare county were seeded to alfalfa this spring and will be watered from a pump of 1000 gallons capacity per minute, run by a 25-hp. gas engine.

J. P. Case of Tulare county shipped a carload of horses to Los Angeles last week.

North California stockmen organized at Redding, February 25 to promote the stock industry and to influence State and national legislation for its best interests.

Feed is more plentiful on the islands of lower California than it has been of recent years. Many carloads

of sheep and cattle are about ready for market.

A spineless cactus shipment was recently made to South Africa by J. I. Jewell of Santa Rosa.

Fresno county creameries paid out \$65,000 for butter fat last January at an average price of \$0.36 per pound. One creamery alone paid out over \$32,000.

Reports for 1913 made to the Tulare Dairymen's Cooperative Creamery Association showed 1,370,738 pounds of butter made and the average price per pound paid to shareholders \$0.379.

Imperial county dairymen are working Los Angeles markets vigorously.

Cream checks in Kings county for January amounted to \$125,000.

A 300-ton stack of hay valued at \$5000, recently surrounded by three feet of water, was burned near Hanford last week. It is thought the cause was spontaneous combustion.

HOGGING-OFF BARLEY.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Hogging off land is a more common expression, in the corn growing states, than here, but it would perhaps be more profitable to farmers here, if more land were hogged off.

An instance of this was seen on Bishop Brothers ranch, in Santa Barbara county. Considerable of the land, on this ranch, is hilly and some of the slopes are so steep that grain harvesting is out of the question. They are not so steep however to prohibit plowing, so there are three fields fenced off, with hog-tight fences. One of these fields is plowed every year, and there allowed to volunteer for two years, so that only one-third of the land has to be plowed and planted each year.

By having the young pigs come on, in the fall, the new grass is ready in the volunteer fields and they get a large part of their growth in these two fields, before the seeded land gets big enough to pasture.

By the time it is ready, the pigs are of sufficient size, to make the most of it, and with the large amount of grain they make a rapid growth and are ready to market before the feed is gone. The balance of the feed is sufficient to carry the breeding stock along until the next year's rains.

Through the use of pure-bred boars, and by selecting the breeding sows, the returns from this branch of the farm is considerable and we were told that there are about 1000 head fed in this way at this time of the year.

With prospects of the largest grain acreage, ever planted in the state, this year, and with the price of pork satisfactory to the grower, it would look now as if many of our farmers could turn off well finished hogs in this way, the coming summer, to an advantage.

A. M. Henry of San Joaquin county was recently elected vice president for California of the American Poland-China Record. This is the first such officer on the Pacific coast. His advertising has sold out his stock, but new pigs coming on in the summer will be advertised in PACIFIC RURAL PRESS.

Live Stock Directory

SWINE.

POLAND-CHINA PIGS FOR SALE—From two to four months old, nice smooth heavy boned pigs, out of our prize winning stock, at from \$12.50 up; also will sell three or four of our three-year-old brood sows; these sows are the ones that have given us our reputation and are fine large sows; have always had large litters and raised them; one raised a spring litter of 10 and saved them all; we sold them before they were seven months old for \$345, and she should do as well for you. If interested, write W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

DUROC-JERSEYS—Three 1-month-old boars. One-year-old boar and bred sows for sale. Elmer Wantz, Orland, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog all ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm, W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry Farmington.

MULEFOOT HOGS—Best for Pacific Coast. Jno. Dunlap, Williamsport, Ohio.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

PRIZE POLAND-CHINA BOAR for sale—The pig that took first prize at Sacramento last year; a show hog; that means he is very nearly perfect; will weigh about 250 lbs. in just good growing condition; the best young hog in the State. We cannot use him or he would not be for sale. We paid \$250 last year for one not as good, and half that will buy this one. Money back if he does not suit. The first \$125 gets him. W. A. Young, Lodi, Cal.

HORSES AND MULES.

FOR SALE—\$1000.00—The imported Percheron stallion Castallane, owned by the Imported Draft Horse Association of Bethany, Cal. Castallane has stood for six years in this locality, and his colts are too numerous. He can be seen at the ranch of W. Peterson, 1 1/2 miles south of Bethany. Pedigree can be seen at Secretary's office. For further information address C. Schlichtman, Bethany, Cal.

FOR SALE—Black Percheron registered 7-year-old stallion. Good foal getter. State license to serve. Will sell, for want of use, at low figure. Sufficient time allowed purchaser for horse to pay for himself. F. B. Chandler Co., Vacaville, Cal.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Purebred Imp. Percheron Stallion, Don Quichotte 42195 (65594); wt. 1900 lbs.; coming 9 years. Sound and sure. Stood here 6 seasons. Address J. P. Menjoulet, Los Banos, Cal.

BLACK JACK FOR SALE—Price \$500; 7 years old, is quick and sure. We have 6 more jacks. We took all prizes for mules at State Fair, 1913. Kelley & Son, Lodi, R. D. 3, Box 93.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson Fresno.

DAIRY CATTLE.

REGISTERED HOLSTEIN COWS—For sale, five large well marked registered Holstein cows, 4 years old; bred in best Eastern herds. Also two-year registered bull, sired by one of best bulls in State; fine size ready for heavy use. Write or call for prices, pedigrees, etc. H. S. Van Vlear, R. 2, Lodi, Cal.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2 Modesto, Cal.

FOR SALE—20 head registered Holsteins. One bull 2 years old, balance cows and heifers. Some A. R. O. cows. All in good construction. M. Holdridge, Wood Colony, Modesto, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey Prop.

CHOICE REGISTERED JERSEYS—1 Golden Lad bull, 4 fresh young cows. \$600; 1 yearling heifer, \$75. F. E. Thayer, Live Oak, Cal.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

FOR SALE—Ten good dairy cows bred to registered Holstein bull. W. N. Totman, Emmaton, Sacramento Co., Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

FOR SALE—Good registered Guernsey bull. K. L. Evans, Gilroy, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

M'CELLANEUS.

FOR SALE—950 A1 Arizona range cattle; cows, yearling heifers, and calves. I. T. Grounds, R. 1, Box 39, Kerman, Cal.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

Raising Sheep on Fenced Land.

[Written for the PACIFIC RURAL PRESS
By J. C. LOOMIS.]

It is claimed that the number of sheep raised in Mendocino county is becoming smaller every year on account of the diminishing amount of wild feed and the increasing trouble with coyotes. These, combined with the recent tariff scare that has retarded production all over the state to a large extent, have worked to the detriment of the sheep industry in that county.

That there are ways of overcoming these unfavorable conditions, however, is demonstrated on the ranch of J. H. Clark, situated near Latonville, and while it has required a good deal of expenditure to make the undertaking successful, it shows that farmers will always find some way of raising sheep in sections which are not particularly adapted to other kinds of farming.

There are 5000 acres of hilly ground in this ranch, a good deal of which is covered with timber and brush, the open spots being the only portion of it that affords much feed, and as is the case in all countries where the timber has been cleared, the undergrowth becomes a serious factor as it makes big inroads on the available feed.

Several years ago it was decided to put the entire ranch under fence on account of the coyotes and since that time the work of fencing has been continued with the result that now a fence encloses the ranch from one side to the other.

The work of doing this has not been so expensive as it would be in a section where timber was scarce, as the posts were all cut on the ranch and on account of this cheap material a great deal of the fence was made of wood pickets, but the last part of it was made of wire which made the cost of the fence run between \$300 and \$350 a mile.

Although this has been a considerable expense, it also saves much expense as where formerly it was necessary to herd the sheep in order to keep them from the coyotes and from straying off, they are now turned loose on the ranch and receive little or no attention from the owner except at shearing time.

With this system it has been found that the percentage of lambs raised is especially satisfactory and for several years over 100% has been raised, which is considered exceptionally good on other ranches in that section where the sheep men have no fenced land.

Instead of overstocking as a great many have done, Mr. Clark has been a firm believer in conserving future crops and for that reason he only keeps about 1800 head on the ranch. In the past fine wool rams have been purchased from pure-bred flocks and the result is that his entire clip maintained a high average for a long time.

The wethers for the last six years have averaged \$5 a head when sold at three years of age and the price received for wool has been very near the top on account of the high quality grown. We were told that 22c. a pound was received for the clip last year but this will not likely be obtained the coming year. It is on account of this slump in wool growing that Mr. Clark has been breeding to the mutton breeds during the past year and will continue to use pure-bred rams of the mutton types.

When asked what could be realized from an undertaking such as he has referred to, he stated that his total receipts from mutton and wool sales last year amounted to \$5000. Considering that there is very little labor connected in caring for the sheep other than the shearing, it appears that they are a great deal more profitable than any other phase of farming would be under similar conditions.

When asked if re-seeding was being practiced on the ranch, the owner stated that it had not been, but gave as his opinion that such practices would be profitable and also that he considered that a band of goats would be of great benefit in clearing the land of the brush, which is one of the serious problems to be overcome in his district.

PLANTING DRY LAND ALFALFA.

Although alfalfa is nearly always irrigated in California, this fact should not blind a person to the advantages of growing alfalfa with only the natural rainfall or subirrigation, for alfalfa is as good at making the best of natural conditions as it is of artificial conditions, as many ranchers have found. Even with moderate rainfall a person will often find alfalfa the most profitable crop, having the added advantage of renewing soil that is run down by long cropping to grains or grain hay.

A circular recently sent out by the Washington Agricultural Experiment Station gives directions and suggestions for raising alfalfa under such conditions, which will mostly apply here.

WHAT MAY WE EXPECT?

1. Areas receiving considerable runoff from higher lands or light subirrigation are found occasionally within the rainfall belt of five to fifteen inches that often produce two good crops amounting to three or four tons per acre, but are no guide to what may be expected with the natural rainfall. They are misleading when so taken.

2. Where the rainfall is less than 15 inches and there is no runoff or subirrigation, one fair to light crop annually is all that should be expected, if every precaution in the culture of the crop is observed. This is better than one fair wheat crop every four to six years.

3. With less than twelve inches rainfall, farmers are advised to experiment with small tracts until they learn what they can do. Considerable risk is attached to establishing the crop with less than twelve inches annual rainfall.

WHAT ARE THE REQUISITES FOR SUCCESS?

1. Seed of the highest quality. Seed will be examined without charge by the Department of Botany, State College, Pullman, (or the University of California, Berkeley).

2. A first class summer fallow, offering a good supply of readily available plant food, stored moisture, freedom from weeds. A poor summer fallow is not safe. The young plants need every advantage.

3. No nurse crop. (Where the soil drifts a nurse crop would be necessary, but the success of alfalfa under

such conditions is very doubtful.)

4. Seeding with a drill.

5. Very thin seeding, preferably in rows 30 to 42 inches apart for cultivation.

6. Thorough cultivation every year.

7. Care not to pasture close at any time.

We would strongly urge farmers throughout the semi-arid belt to give alfalfa a careful trial. As a forage and soil-improving crop for such conditions it is of the highest rank.

Not How Cheap But How Good



An Ideal Green Feed Silo will last you a lifetime as it is built to withstand all weather conditions and will produce first-class ensilage at all times.

An Ideal Green Feed Silo will prove to be the best investment that any dairyman can make on account that three cows fed on ensilage will produce as much milk as four without.

Buy an Ideal Green Feed Silo now and save enough to pay for your silo the first year by filling it with your first cutting of alfalfa.

Write for Catalog B for full information.

ENSILAGE CUTTERS AND ALPHA GASOLINE ENGINES

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C. W. Ginn of Corcoran is milking 75 cows. Read what he says.

Corcoran, Jan. 7, 1914.

Mr. C. F. Daniels,
Dear Sir;
I consider my Hinman investment one of the best I have ever made.

Yours truly,
C. W. GINN.

C. F. DANIELLS & SON, Modesto, Cal.,
AGENTS FOR CALIFORNIA AND OREGON

America's Leading Horse Importers

PERCHERONS



"Our recent importation arrived at our Oakland stables March 1st. This shipment comprises the best lot of stallions ever shipped to the Pacific Coast. Every horse in the lot is sound, young, stylish and of the best conformation.

At the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons; two Second Prize ribbons, and other honors.

If you want the BEST let us hear from you."

McLaughlin Percheron Company
Kansas City, Mo. Oakland, California

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for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

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Warranted to Give Satisfaction.

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Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
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Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
Warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
its use. Send for descriptive circulars,
testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.



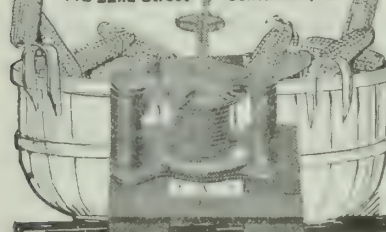
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from 100 to 400 sq. ft. of rich ground
that would be yielding bumper
crops. Take out the stump! Now land
often yields 200 to 500 profit the first year.

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Cleans an acre a day. Make money clear-
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of the inferior. 1 1/2, 2 1/2, 4 1/2, 6, 10, 15, 20-h.p.
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cisco, Cal.



WHITTIER COBURN CO. S.F. SOLE MFRS.

Quarantine on Tuberculosis.

Tuberculosis among dairy cattle has been a much discussed problem through the columns of this paper as there has been some difference of opinion regarding the merits of testing against it.

In a recent letter to this office Malcolm H. Gardner, Supt. of Advanced Registry for the Holstein-Friesian Association, gives his views regarding the recent law which went into effect in Illinois and also his views on the disease, which should be of benefit to those interested in the subject. He says:

Tuberculosis in dairy cattle is a subject on which I have never expressed my views publicly; for where doctors disagree ordinary laymen should be cautious in discussion. But the reported quarantine lately established by the state of Illinois against all the important dairy states, an ill advised action as it seems to me, will, without doubt, bring the subject of tuberculosis forcibly to the mind of many a Holstein-Friesian breeder. That a state should demand a bill of health with cattle brought into the state is a right and proper action to which no honest Holstein-Friesian breeder will object; but such a quarantine as is reported by the daily papers would be an injustice to the breeders of pure-bred cattle both within and without the state, and especially so to breeders of Holstein-Friesian cattle.

It has been again and again asserted by writers on the subject that the movement of pure-bred cattle from herd to herd was the chief factor in the spread of bovine tuberculosis, and some have declared that certificates of health issued by the veterinarians of some of the dairy states were far from reliable. If this be so, any reasonable quarantine would be such as would allow the bringing in of cattle under a bill of health, but would quarantine such cattle at the farm of the owner until such time as they could be released as free from disease. I have no doubt but that many Holstein breeders are better able to discuss tuberculosis than am I; for neither did I ever have a case of bovine tuberculosis in my herd, nor have I ever had any near relative affected by tuberculosis in any of its forms. However, I have studied the subject carefully; and I think I may safely say that it was what I knew of the disease that enabled me to keep my herd free from it.

The doctors tell us that there are three main varieties of the disease. That one variety affects birds and is called avian tuberculosis; that another affects cattle and is called bovine tuberculosis; that the third affects men, and some other animals, and is known as the human variety. Each of the three varieties is found in many forms. The great German specialist Dr. Koch held that bovine tuberculosis was not transmissible to man; but other specialists hold that Dr. Koch's experiments were too limited for an accurate decision, and that the bovine variety is transmissible to man. It is on the basis of the general prevalence of this view that boards of health base their often arbitrary actions in matters pertaining to the production of milk. It is held that if man consumes tuberculous flesh, the germs of the disease will have been killed in the cooking of that flesh; but that as milk is consumed in its natural state, the

germs pass alive with the milk into the human system. The largest consumers of milk are infants and children—the very ones least able to resist the action of any germ that may by any possibility be contained in the milk.

Fresh air, sunlight, and cleanliness are the foes of harmful germs of all kinds; and all these should be within the reach of every Holstein breeder. No breed of cattle can be immune to bovine tuberculosis, if exposed to that disease and the conditions for its development are favorable; but owing to their natural strength and vigor of constitution Holstein-Friesian cattle are not readily susceptible to disease, provided owners do away with all conditions that favor disease. Sunlight and fresh air cost nothing; cleanliness may be had at the cost of the required labor.

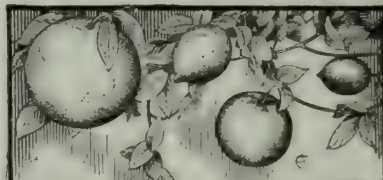
With his cattle all in apparently healthy condition, except when required for the making of sales, I would not advise any breeder to use the tuberculin test; for why inject what is virtually a poison into the blood of a healthy herd? But if any animal showed symptoms of disease I would isolate and test her at once; and if she reacted I would test every animal with which she had come into contact. I would destroy the animal showing symptoms, and would give separate stable quarters to that part of the herd that had reacted; then I would keep careful watch of all that had reacted, and slaughter any animal as soon as she developed any apparent symptoms of the disease. I would pasteurize the milk of all reacting animals before feeding to calves and under no circumstances would I feed the milk of any cow not apparently in good health to any calf. I would quarantine all purchases for three months before mixing with the herd, and be careful in the making of such purchases. Bovine tuberculosis is a dread disease to be guarded against in all practicable ways; but until I get much more light than I now have I shall not be ready to believe that it can be transmitted by an animal that in itself shows no visible signs whatever of that disease.

WHEN HORSES STOP HARD WORK.

The different ills of horses, which often occur when they are taken from the hard summer and fall work, are not so serious a complaint in most localities of California as elsewhere, yet where they do occur they may be almost wholly overcome, according to Prof. E. L. Potter, of the Oregon Agricultural College, who in explaining his methods of management, states:

When the horse is first retired from the regular and steady work of the farming season and placed in the stall, his grain ration is cut down first of all. The amount to be given depends upon the condition of the horse, but should neither be enough to glut nor so little as to starve him. If his system is in good condition it is safe to give him enough grain to keep him in rather fat working condition. But if he shows signs of indigestion, constipation or fever, the amount of concentrated feed is cut down.

If any of the unfavorable symptoms noted appear, oats are entirely discontinued and bran given in its stead. If greater laxative effects are



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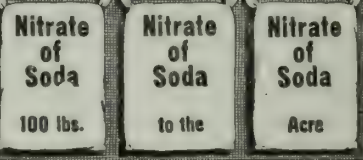
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needed, the bran is made into a mash by pouring boiling water over it. If there is too much looseness of the bowels, oats take the place of bran. Careful attention is given to the animal and to the effects of its feed.

As laxative effects are generally required during this season, one of the legumes should be given in place of grain, hay or timothy. The legumes, alfalfa, clover and vetch, excite the excretory organs and help eliminate the poisons that are likely to develop in animals when changed from active to inactive lives. It is necessary to be careful not to give too much of the legume hay. Be sure that the horse eats it up clean before he is given more.

The disease known as mud fever may be prevented by keeping the

horse in good condition and giving him thorough cleaning. It is certain that the fever develops as a result of permitting the mud to cake and remain on his legs, stopping up pores and holding the sweat and other filth against the skin. Washing off the outside mud is all right as far as it goes, but it does not go deep enough. After the washing a good brushing is needed to clean out the dirt and scurf, leaving the skin open to the air.

Give the horse work when you can, and when that is not feasible let him run out occasionally. I do not say "Keep the horse clean," but "Clean him up thoroughly." The harm of letting him run in the wet and mud is not so serious as keeping him shut in the barn all the time.

How a Condensing Plant Helped.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

"What affect has the condensed milk factory had on the dairymen in this vicinity," was one of our first questions asked the manager of the Alpine milk factory at Gonzales, Monterey county. The reply was, "Better prices and a consequent bettering of dairy methods."

That part of the Salinas valley has been a large dairy section for many years, but until five years ago the product was sold in the form of cheese. The Swiss, who do most of the dairying, were expert cheese makers and the creameries could not pay sufficiently large prices to draw the trade. Where 100 pounds of 4% milk would make four pounds of fat, it would make ten pounds of cheese which would bring considerably more money when both were sold at the market price.

Although the number of dairies was not large, the size of them was necessarily greater, than if butter fat were sold, as the over-head expense of the factories was smaller per cheese with a large production.

Being an alfalfa country, the cheese makers had to practically re-learn their business, as alfalfa is not generally considered a good feed for cheese making, so the manufacturing end was not all smooth sailing. Still, the added returns, over butter fat prices, made the game worth while.

With the starting of the Alpine factory, however, the cheese industry assumed a different aspect, for the factory was willing to base the price of milk upon the cheese quotation and saved the dairymen the expense of running a cheese factory, finding a market, etc.

The only doubt about the new venture was whether good condensed milk could be made from the alfalfa product, for in this respect the condensing plants have been in the same predicament as the cheese makers.

By giving the subject much study, and through changes in the process, the ordinary obstacles were overcome and at present the product of this plant ranks second to none.

To get back to the benefits from a dairymen's standpoint, we will take the San Francisco markets as given in the RURAL PRESS for February 7, 1914. Under "Butter," extras were bringing about 33 cents, for the week previous. As most creameries are willing to pay for fat, about 4 cents more than quotations, it brings the price up to 37 cents at the farm. A hundred pounds

of 4% milk sold in this way would bring the dairyman \$1.48. Fancy California flat cheese brought, during that week, 18½ cents per pound, and as 100 pounds of cheese the returns to the dairymen would be \$1.85 a hundred less the expense of manufacturing. The price paid by the condensing plant for the same milk would be ten times the price of the cheese quotations, 18½ cents, with a premium for a test over 4% fat, and a slight reduction for milk testing less than that per cent.

One can see at a glance why the dairymen have been selling their product to the condensary, in increasing numbers. At present 80,000 pounds are daily being sold in this way. The dairymen are increasing the size and quality of their herds as a result of the good market conditions.

Selling whole milk in this way has made the sanitary conditions in the dairies better than before, for while the processing that the milk goes through, before being canned, obviates all chance of disease, more sanitary conditions on the ranches are required by the factory.

As the condensed product finds a large market, and as the handling of alfalfa milk in this way becomes better known, the number of condensing plants will be greatly increased.

KAFIR OR EGYPTIAN?

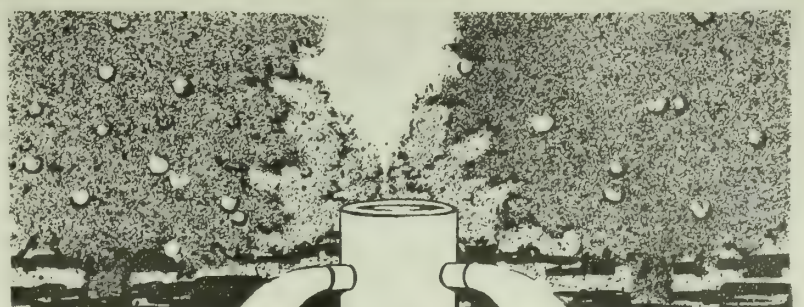
To the Editor: Which will bring the better results: Egyptian or Kafir corn? Also, is there as good market for the Kafir as Egyptian? When is the best time to plant?—C. B., Modesto.

[Kafir is usually counted the better. There is vastly more of it grown. Both kinds, and all other sorghums, cannot be planted until after frost danger is over on your place. They would not be hurt by a short overflow, but on land subject to overflow you can plant after the June flood and still get a grain crop in most years. Why not plant some in May and some more after the flood—EDITOR.]

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Range Improvements and the Meat Supply.

An interesting address was made before the National Wool Growers' Association at its recent meeting, held in Salt Lake City, by Albert F. Potter, of the United States Forest Service, in which he said, among other things, that the question of meat supply is involved in the methods of grazing used on the national forests. He also made the statement that over-grazed ranges can be improved quicker through use than they could if they were left idle.

He also stated that the systematic use of the ranges has stopped loss of forage and that the feed formerly wasted has been putting the stock in better condition, with the result that, in many cases, the stockmen have been able to sell beef and mutton direct from the ranges where they were before producing only animals which had to be fed and conditioned before they could be put on the market.

He called attention to the experiments of the Government in artificially re-seeding the grazing areas to cultivated grasses, and showed that in some cases the forage crop has been increased as much as 400 per cent. He maintained, however, that this method is both slow and expensive and said that the great part of the range lands must be improved by protection and natural re-seeding for the next 20 years at least. He said, too, that investigations have established beyond a doubt that natural re-seeding can be accomplished best by a rotation system of grazing based upon the simple principle that grazing aids in scattering and planting the seed after the seed has been given an opportunity to mature. Reports show that areas protected until after seed maturity and then grazed, as compared with areas absolutely protected for the whole year against grazing, are approximately 50 per cent better, and probably 200 per cent better than range which has not been protected at all. This means that ranges can be improved faster in use than they can be in idleness, and the principle is being adopted on many of the forests.

He also spoke of the new open system of handling sheep, which is simply quieter herding during the day

and bedding the sheep where night overtakes them. He estimated that an increase of 10 to 25 per cent has been added to the carrying capacity of the ranges and that 5 pounds weight has been added per lamb, because they have not been harassed by herding or forced to trail long distances to and from bed grounds. On 5,000,000 lambs this means 25,000,000 pounds added to the sheepmen's salable product, and to the country's meat supply.

The change in handling has been in large part responsible for the building up of the Madison forest, which there enabled an increase in the number of sheep grazed from 90,000 to 107,000, with promises of further increases of several thousand.

One objection to the new method of handling sheep brought up by many owners has been that the herders who were used to the close system would not adopt the new one. The associate forester says that herders naturally take a pride in having their sheep look well, and that since they are coming to realize that open herding means better sheep, they voluntarily adopt it.

ALFALFA AND "SOUR DOCK"

To the Editor: I have a couple of acres of alfalfa planted in the Feather river bottom, it was planted two years ago, the first year of course I did not get much of a crop, but last year I cut three good crops, the first being mostly weeds, but the others were good, now this year as I expect you are aware we have had lots of rain, and the river boomed and all bottom land was covered for several weeks, and in looking over the land I notice that although the alfalfa does not seem to be killed, although it has not started to grow yet, there is a big growth of Burdock ("sour dock") on it and it would be hard to tell whether I seeded the alfalfa or sour dock, and what I would like to know is, if there is any way of killing off the dock, as I am afraid it is going to kill out the alfalfa. There is no use of talking of pulling the dock up as that would be too serious a job.

About twenty-five years ago I worked on a new irrigation project in New Mexico, called the Pecos River Irrigation company, and they boomed the raising of sour dock as a crop, and there must have been something to it, as there was a company there who had gangs of Mexicans along the banks of the Pecos river digging up the wild growth, and had machines to slice it up, when it was dried and shipped to Liverpool, England, and I understood brought big money for tanning purposes, so there must have been some foundation for the industry. I left there before there was any start made in the cultivation of it.

As the project (irrigation) was run, although not financed, by Californians who came from around Fresno and Redlands I thought perhaps they might be doing something in that line in southern California, because if there is to be anything made raising sour dock (or canaigre) as it was called there, I do not know where there would be a better place than the bottom land of the Feather river. So if you can enlighten me on the sub-

ject I would feel greatly obliged.—A. C., Live Oak.

[Your alfalfa will probably come out ahead of the weeds in the second cutting, as it did last year. Flooding while the plant is not growing does not hurt alfalfa. If the dock growth shades the ground too much run the mower over it and let the alfalfa come through as the stuff dries and shrivels.

If you have a "burr dock" it is not

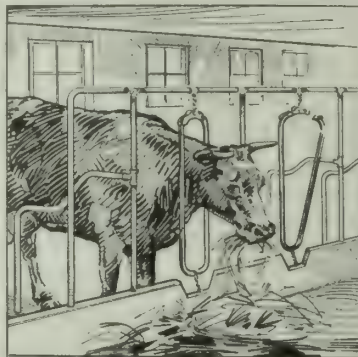
the sour dock which is used for tanning. You left New Mexico just in time to escape the collapse of the "canaigre industry." There was no money in it. Similar enterprises in California also went up the flume. There's a little wild canaigre gathered and marketed but no crop made of it that we know of.—EDITOR.]

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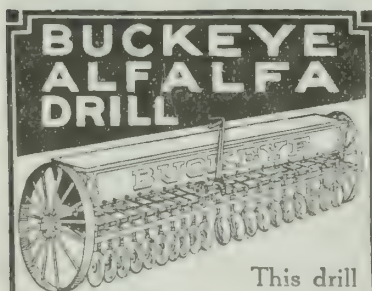
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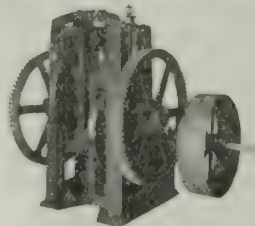
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A good many people are planting walnut trees commercially and lots of others are putting out a few for their own use. The walnut, being of a vastly different nature than many of our deciduous trees, requires a different handling in the way of pruning and shaping, and the following instructions on the making of a walnut tree by Dr. W. W. Fitzgerald will be in certain parts new and interesting to many prospective walnut growers.

It is useless to plant during the cold months of the winter, as your roots will not start to grow and are liable

to become sour from the cold, damp earth, but in the spring when the ground begins to get warm, it is natural for plant growth to put forth. Roots should be about 18 or 20 inches long; if too long, they rot, due to the soil being too cold and wet. Then make a fresh cut on the under side of each root, spread them out in their natural position in the hole where they are to be planted. The hole should be dug large and deep, if it has not been dynamited. Put in top earth at first and see that it is filled in well around the roots. The earth should be tramped thoroughly, being careful not to bruise the roots with your boots. The top six inches that is filled in should not be tramped.

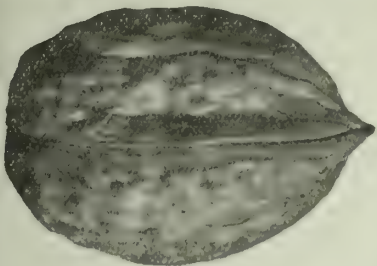
Previous to planting, the tops of the trees should be cut off from 12 to 15 inches above the ground, according to the number of buds on the lowest part of the trunk of the tree, and the cut waxed. After these buds make a growth of four to six inches, I select the most thrifty one to make the butt of the future tree and pinch off the tops of each of the other limbs. This will stop their growth and leave them with a few leaves to shade the butt of the tree.

When cutting trees back this way, it is absolutely necessary, especially on the strong-growing hybrid root, to sucker your trees often until the top gets a good start. You should dig down four to six inches around the tree to cut off each sucker close with a sharp knife, for if you break them off, adventitious buds will start out again and by cutting them off with a sharp knife you will remove all these buds. This should be done the first time just as soon as the buds begin to swell on any of the trees, and every tree should be suckered, for if you allow these sucker buds to start, being lower than those of the graft, they get the first sap, and oftentimes are the cause of the buds above the graft not starting. This suckering should be done about once every ten days, or just as sure as you let the suckers grow, they will keep back the growth above the graft or will prevent it starting altogether.

The tree will probably make a growth of 4 to 12 feet the first season. The next year it will not make growth in height, but will throw side branches. Some think it necessary to cut off the top of a tree to make it branch out, but my experience has been that if you will leave the tree alone two or three years, it will throw out its side limbs and make a perfect tree. The only pruning that is necessary is to cut off the limbs that are too low and any limbs that cross and would chafe against each other.

After the tree gets older and is bearing, the limbs of the tree should be pruned to open up in the center, allowing the sun and air to go through the tree, the same as with other fruit trees. With some trees that are inclined to go to wood and do not throw out enough fruit buds, you may cut back one-third of the limbs, which causes them to throw out new limbs on which the fruit buds form.

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Questions That are Puzzling Our Readers.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

This is going to be an experience meeting that will require all the space we are allowed. Questions that can be answered through the columns of the Press are useful to a great number of readers; while if they are answered by mail they are of use to only one reader. Another thing that should be kept in mind is that it takes time and money to answer private letters.

Some readers are afraid their letters will be printed and they don't want them to be; well our friends need not fear that, as I never give full name and only that part of a letter which relates to the question they ask, so there is nothing to fear at all. Just send your questions in early so that the copy can be given to the printer early in the week; then you will see the answer to your question almost as soon as if it were answered by mail. The first question on hand is:

"Do you spray eggs before putting in the incubator; also do you spray the incubator after every hatch?"

Answer: Before starting the incubator it should be washed out with a solution of creolin and warm water, one teaspoonful to a pint of water. It can be used either as a spray or a wash; but if sprayed in, it must be dried up with a cloth. Then start the lamp and regulate before putting in the eggs. There used to be a foolish notion that eggs for hatching must never be washed and I have seen eggs set that were covered with dirt and by the time the hatch was due the dirt would be baked as hard and dry as a bone, and people wondered why the chicks died in the shell. It would have been a bigger wonder if they had been strong enough to dig through that dirt and shell baked together, or even to develop with the pores of the egg so closed. No matter how clean the eggs are I always put them through a bath of creolin and water. This acts as a germ destroyer and it also helps to soften the shell, because there are oils in creolin that are chemically combined and they do their work quietly and slowly. The egg bath should not be so strong as the incubator bath, about one teaspoonful to a quart of water being sufficient.

The next question is from a subscriber who is having some trouble with disease. He states that he is sending a head from one of his chickens that died. The head was probably interred without ceremony by office force so did not reach me, for which I give thanks. This sending of portions of diseased fowls through the mails is not the right thing to do, because they are some time on the road and by the time they reach the office are not very agreeable objects to handle. The description given indicates that the fowls have roup. Dissolve one ounce permanganate of potash in a quart of water and put about one tablespoonful of this mixture per two quarts of water in all the drinking

water the fowls have. Then dip the swollen heads of the chickens in a quart can of coal oil, wipe off the extra oil, and repeat in three days.

Raising Broilers.—The next question is a very reasonable subject at this time so we will go into it at some length.

Question: "I want to raise large broilers and fryers for the market. I have five acres of land and am not certain what large breed to pick. Tell me which is the hardiest and best, please."

Answer.—The hardiest fowls I have ever raised are the Buff Orpingtons. They are absolutely impervious to weather, almost from the start. If you can get stock, or eggs from stock that have not been inbred, so that there is a lot of life and vigor in them, you will make no mistake in starting with Buff Orpingtons. But you need to start right with strong stock. Broilers must be kept growing all the time, they are like hothouse plants; to reach a certain size and weight in a given time it is necessary to force them. To do this the first thing is to have the stock that will stand forcing.

The feed for broilers must be very largely soft mash, for these make quick growth. Bran, cornmeal, meat scraps, and shorts are the feeds mostly used, just warm, and in quantities the chicks will eat up in a few minutes. Chick feed or cracked wheat and corn must be fed at night as it lasts longer than soft feed. A warm mash for breakfast, then a little green feed for a side dish as an appetizer, then another warm mash towards ten or eleven o'clock. Broilers need at least five meals a day and six is better. When they get tired of one thing, feed something else because the appetite must be kept keen. Green feed in the form of sprouted oats makes them grow very fast and gives bone making elements. The Orpington can be made to weigh two pounds in 70 days without much effort if you get the right kind of stock.

Your five acres of land will not be needed for a broiler plant except to grow feed for the hens and as a range for the laying stock. You can never make a broiler business pay by letting the chicks have range. No sir, you will have to keep them in close quarters and feed, feed all the time until they lay on that two pounds of flesh, not gristle and bone. The flesh of broilers and fryers must be soft and palatable, not hard from exercise. You will need a warm brooder house where the chicks can stay most all of their short lives, because every move or change you make will be very likely to hinder the growth just a little, so it is best to make as little change as possible until ready for the table.

The Orpington and Wyandotte command one cent a pound better price than any other kind of chicken on the market and whether you raise them for broilers, fryers, or roasters, they will pay if properly fed and cared for. As soft roasters they find ready sale in all markets; and when sold as broilers, are plump and fat at seven to ten weeks old.

BEING HANDY WITH TOOLS.

A short time back I was sowing trouble for myself by telling you folks what could be done by those that were

handy with tools. The Fancier's Monthly comes out with some full-fledged poetry that if read reversed would come near fitting my case; read it below:

Father took his coat off—said
I'll do that job today.

We need a chicken coop you bet;
Our hens all get away.

He found the hammer and the nails
And then he got the saw,
And went to work while all the tads
Looked on in silent awe.

At last he got some short lengths cut,
And while he mopped his face,
He studied out the proper way,
To put those boards in place.

He nailed a strip across a strip, and
Then he made a slight miscue;
The hammer came down on his thumb
And mashed it black and blue.

Then father used some language that
Was never heard before,
And mother took the tads inside
And softly closed the door.

That was my case exactly; the hammer came down and mashed my thumb black and blue, at least I guess that was the color for to tell the truth I did not stop to look, and I'll bet dollars to doughnuts you could not guess what I did unless you were told. I sure did not play "father" and make things blue with language that was not heard before, but I played "kid" and shoved my thumb in my mouth and went to sucking on it, did not have any time to bother cussing, it hurt too bad and all because I was trying to practise what I preach and make a brooder box.

Next time yours truly is going to preach and forget the practice work with hammer and nails, especially when the boards are old timber.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

BABY CHICKS all sold for season! Special on eggs for February: MacFarlane strain White Leghorn, \$1.50 per 15; \$2.50 per 30; \$6.00 per 100; \$50.00 per 1000. Owen Farm and Fishel strain White Plymouth Rocks, \$2.00 per 15; \$4.00 per 30; \$10.00 per 100. MacFarlane strain White Leghorn cockerels, \$3.00 each; \$30.00 per dozen. Ten acre plant, 15,000 square feet under roof. Address Dept 2, Newton Poultry Farm, Los Gatos, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities; \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, San Luis Obispo County, Cal.

EIGHT CHAMPION BREEDING PENS (Lester Tompkins strain) S. C. Rhode Island Reds, trap-nested stock. Eggs for hatching. Cockerels for sale. Fertility guaranteed. At San Francisco show, 1914, 1st pen, 2nd and 5th pullet, 4th hen on 5 entries. Wm. Larm, 746 Lincoln Ave., Alameda, Cal.

WHITE LEGHORNS—Vigorous winter layers, selected two years by Hogan method. Mated to potent males from Walter Hogan's own prize laying stock. Eggs, \$5 per 100. High fertility; 4000 hatched here this season, over 90% fertile. VERDE POULTRY FARM, LIVERMORE, Cal.

OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for March, \$10; April, \$9; reduction in quantities. Sam Jose Hatchery, 373 Meridian Road, San Jose, Cal.

S. C. WHITE LEGHORNS—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected hens, bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. Bihn, Santa Clara Valley Hatchery, San Jose, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

FREE—66-page catalogue, describes in detail prices, etc., on 13 kinds of baby chicks, hatching eggs, incubators, brooders, etc. We ship everywhere. The Pioneer Hatchery Co., 112 E. 8th St., Los Angeles, Cal.

BABY CHICKS AND HATCHING EGGS—Beautiful White Orpingtons; also the popular new breed, Buff Minorcas. All thoroughbred, Hoganized stock. Mrs. C. A. Sanford, Mountain View, Cal.

FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

BRONZE TURKEY EGGS, \$3 per setting from largest Turkey farm in Stanislaus Co. Crows Landing Turkey Farm, Box 227, Crows Landing, Cal.

SINGLE COMB BLACK MINORCA eggs for hatching, \$1.50 a setting. Mrs. L. A. Benoit, Route 2, Modesto, Cal.

WOODHAVEN FARM BUFF ORPINGTONS—Bred for size and winter laying. Choice stock and eggs for sale. Mrs. C. M. Smyth, R. 3, Stockton.

WHITE ORPINGTON EGGS, \$1.50 per 15. White Holland Turkey eggs, \$3 per 11. Mrs. Loren Floyd, Stratford, Cal.

ORPINGTONS—Buff and White. Stock reasonable. Eggs \$3 and \$5 a setting. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

DIABLO WHITE ROCKS EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

MAMMOTH CRONZE TURKEY EGGS from the largest and best stock in the West. Special prices. Geo. A. Smith, Corcoran, Cal.

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BARRED ROCKS ONLY—Am booking orders for eggs and chicks for March delivery. Send for folder. G. L. Hawley, Madera, Cal.

TOULOUSE GESE EGGS—5 for \$1. Indian Runner duck eggs, 13 for \$1. F. Sewall Brown, Newark, Cal.

CHICKENS, DUCKS, GESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties L. W. Clark, Petaluma.

BUFF ORPINGTON EGGS, \$2.00, \$1.50 setting. Runner Duck eggs, \$1.00. "Glendale," Fleming Ave., San Jose, Cal.

LIGHT BRAHMAS. Breeding stock for sale. Eggs for hatching \$2.50 per setting. Box A. B., Pacific Rural Press.

BRONZE Turkeys and Eggs. Ed Hart, Clement, Cal. Large size, good plumage, early maturity.

PETALUMA BROODER STOVE, Hayward, Cal. Best on market. Latest improvements. Catalogue free.

BROODER STOVES—New; well known make. For sale cheap. Box 420. Pacific Rural Press.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

BELGIAN HARES—Thoroughbred Belgians, with or without pedigrees. OLD HICKORY SUPPLY CO., Dept. 3, San Francisco.

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At the Napa Egg Laying Contest our pen finished second, 66 pen scompeting. In our own class, White Leghorns, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

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It supplies the chicks with fresh air. Is safe, economical and reliable. Correspondence solicited.

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Hints and Reflections on Fowls.

[Written for the PACIFIC RURAL PRESS
By A. W. ROBINSON.]

The progressive, wideawake, aggressive poultryman has an abiding faith in all that pertains to his laudable calling. Notwithstanding the many discouragements that have, within the last year, induced not a few poultry raisers either to reduce the size of their flocks or entirely to give up their efforts to successfully raise for the market poultry for eggs or for meat, the outlook for more prosperous days is continually brightening.

Among the deterrents that have unsettled the faith of not a few are the increased cost of poultry foods; the unsatisfactory returns for eggs marketed and, in some localities, untoward climatic conditions.

It is a long road that has no turning, and there is a very gratifying outlook for the future. If foods do rule high, eggs are advancing in price. There is to be a constantly increasing demand for poultry and poultry products that, in this state at least, will reach its climax in 1915. The stimulus that it then will have attained will, by no means be effervescent.

He who is forehanded, who already is laying plans for an enlarged business by the dawning of the great Exposition year, be he the so-called utility man or woman, or the breeder specialist, will reap abundant reward. This is a period when many of the details of the business are segregated to a degree heretofore not put in practice. Many an egg farmer, conducting a thriving business on a small or a large scale, prefers to buy newly hatched chicks rather than to incubate them. For this reason we note, especially on this coast, a wonderful expansion of the baby chick trade.

There is a constant and even increasing demand for young stock, the writer, as have many others, having turned down several applicants this fall. There are many who prefer to purchase pullets at the age of four to six months. As a matter of course the desire of one and all engaged in the industry is to have hens lay constantly when prices rule highest.

develop a winter laying strain, of whatever breed may be held in highest esteem, has of late years been the aim of many a poultryman, and it is to be noted that coveted success has crowned well directed effort in numerous cases.

Into the solution of this problem enter two or more factors, one of which is the best time of the year to bring out the hatches. Trap nesting is another notable feature to be considered.

There are no hard and fast rules that are to be enforced in the rearing and managing of poultry, although general rules may, perforce, have to be scrupulously observed if success crowns our efforts. Much depends, for instance, upon climatic conditions and one's environments. Even in our own state, alone, there is so great a divergence of local conditions and surroundings that methods found best in one section of the commonwealth must be modified to some extent in others for best results.

Let it be borne in mind that the bred-to-lay hen is the most profitable. Comparatively few of the poultrymen of this state have, thus far, engaged in raising fryers or broilers or capons, but more attention is now paid to this

feature of the industry than formerly. The local, national, and international egg laying contests that have, of late years, been successfully conducted in many parts of this country, in Australia and in several European countries, for the purpose of finding the best egg laying varieties, or rather, possibly, the best strains of the different breeds put to the test must, eventually, bring to the forefront the long-wished-for, earnestly sought, priceless secret, to become the possession of all enterprising members of the craft. Phenomenal records have been, and will continue to be made and the successful demonstrators will reap a substantial reward, and justly so. But it is one thing to have a few individual members of a flock that will pass way beyond the two hundred egg mark and quite another to assemble flocks numbering hundreds and thousands that will as a whole, or even in great part, make a like showing.

A very common saying by experienced poultrymen is that the male bird is half of the flock. Carefully conducted management on the part of many a breeder in all parts of the land during the last year or two, has fully demonstrated that the cock bird may have even a higher value in working up an egg laying strain. We are beginning to pay more attention, in the matter of breeding, to the ancestry of the male bird, rather than to give the preponderance to phenomenal female layers. The age of the birds, both male and female, used for breeding, must also be considered. One successful breeder works out the problem, entertaining certain views, and his neighbor, who may likewise march in the front rank of breeders, may take a different tack. It is a very interesting matter, calling for skillful perseverance and a determination to achieve grand results.

BUCKWHEAT FOR BEES AND FOWLS.

To the Editor: I wud like to make a few inquiries of yu regarding the uses of buckwheat. I understand that this is a very first class hony plant. As I am keeping bees, and hav at least at present no special facilities for harvesting the buckwheat, I wud like to kno if I cud just cut it and let the chickens thresh it out themselves. That is, wil it make a god chicken feed? I am also informd that the straw plowd under makes an excellent fertilizer. Can this straw be used for catl feed? I cud use it to very good advantage that way, if possibl. Yu may anser thru yur columns if yu prefer. I thank yu in advance.—K., French Corral.

[Our correspondent is not illiterate: he is a reform speller, and as we have been shy on reform spellers since Teddy went to South America, our readers may like to see how it looks.

Buckwheat is a good food plant for bees, but not a good honey plant for sale because the honey is very dark and cheap. Buckwheat straw is eaten by stock, but is no better, if as good as other straw. Chickens will help themselves to the grain when they know it. It should not, however, be made their sole feed. The straw handles well as a fertilizer because it rots very readily. The green plant plowed under is a good source of

humus. The plant is tender and has to be grown between frosts, and it enjoys best a low moist soil.—EDITOR.]



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giving a full account of hatching, raising, and caring for chickens, with details of a Complete System of Feeding.

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Poultrymen Pleased

By letters reaching this office with pleasing frequency, the **PACIFIC RURAL PRESS** Pulls Like a Tractor For Our Poultry Advertisers

Read the following letters which arrived just recently:

Dixon, Cal., Jan. 10, 1914.
Pacific Rural Press.
Your paper was certainly the means of turning me in many valuable orders for my stock.
I am, very respectfully,
R. A. HOLDRIDGE.

DIABLO POULTRY FARM
Concord, Cal., Feb. 1, 1914.
Pacific Rural Press.
Replying to yours of the 30th ult. would like to have the ad continued. Have had any number of inquiries through the Press and must say that I am surprised.
Yours truly,
C. J. STRUBY.

Oroville, Dec. 22, 1913.
Pacific Rural Press.
I have already had some high-class returns from my "liner" in your poultry column and desire to give you a strong testimonial if you have any use for same.
Yours very truly,
E. A. JACKSON.

If you have baby chicks, breeding stock or eggs for hatching for sale, a "liner" in our Poultry Breeders' Directory will find customers for you. Display space quoted on application. Address Advertising Dept.

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White Rock, Black Minorca, White, Brown and Buff Leghorn. All high-class stock. Send for booklet of prices.

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Where olives, figs, peaches, etc., pay big.
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FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Farm Development, Hays.....	\$2.00
Manual of Laws.....	2.25
Farm Buildings.....	2.20
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The Dairy Farm, Gurler.....	1.10
Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoesmith.....	.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees and California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
New Onion Culture, Greiner.....	.50
American Cattle Doctor, Dadd.....	1.00
Home Pork Making, Fulton.....	.50

Send remittances to
PACIFIC RURAL PRESS,
420 Market St., San Francisco.

The Home Circle.

The Colonel's Plan.

(Continued From Last Week.)

II

The colonel's attention grew and upon Mrs. Kennedy their effect was marked. She became curiously gracious by fits and starts to her daughter-in-law, and the acid undercurrent slipped out of her talk. Rosebud was greatly puzzled, but rejected the suggestion that Archie proffered with disdain. Her father—her dear, faithful soldier father—could not have any such intention. It was not likely. So Archie held his peace.

"Come over to tea with me some afternoon," said the colonel once, and Mrs. Kennedy, who took all his speeches to herself responded:

"Charmed."

He fetched them in the dogcart, and Mrs. Kennedy got up as lightly as she was able, and fancying that only old ladies were supposed to dread accidents, would not show her terror, but sat smiling nervously, while the horse capered round and round. Rose held on behind and wondered.

It was a lovely day. They skimmed along with glimpses of moor and sea, beyond the rowan-fringed highroad. Mrs. Kennedy chattered happily, pointing out little bits of scenery to the colonel, who, fully occupied, could only glance at them out of the corner of his eye and mutter "beautiful."

There were houses here and there, showing through trees dimly, as became country mansions. Mrs. Kennedy did not omit to take note of these.

"Do you see Castle Whin?" she said.

"It is quite deserted now since Sir James went abroad. He has been frequenting some foreign bath place for his gout. I am sure it must be Monte Carlo, really—because he has always rakish. He was an old admirer of mine, by the way."

She laughed, a little high pitched laugh, and kissed her hand to the chimneys of Castle Whin. Then she looked behind graciously.

"My dear Rose, are you comfortable?"

They turned in at the gate, and the colonel made a pretty speech. Mrs. Kennedy skipped up the steps, expressing her curiosity to see the wonderful trophies of his adventures.

"I shall be delighted, if it will not bore you," said the colonel, courteously.

Rosebud rolled up her gloves and ran out into the garden to fill her hands with flowers from the dear old untidy home. She could hear the colonel throw up the windows to let Mrs. Kennedy see the view, and she could hear her mother-in-law making exclamations in a young and affected voice. But the flowers, the familiar flowers, were smiling up and Rosebud forgot everything else, bending eagerly over the borders.

The colonel was taking Mrs. Kennedy all over the house, sparing her no tiger story, no pig-sticking tale. There was only one door that he did not unlock, walking past it hastily.

"And this?" inquired the visitor in passing; but he did not seem to hear.

Lastly, he invited her to behold his study, and the treasure it contained.

"What a delightful room," said Mrs. Kennedy, sinking deep into a shabby

old leather chair. She was slightly fatigued by the royal progress from room to room, although she did not show it, as her color was not able to come and go.

The colonel looked wistfully around his den.

"A few little touches would make it charming," went on Mrs. Kennedy. "At present it gives too much of a brown effect. A lighter paper—and art serge drapery—and a few frilled cushions, would make it lovely. And then these old swords want polishing."

"Whom have I to do that for me?" said the colonel suddenly, leaning against the oak mantelpiece, grizzled and brown himself. "I am only a solitary old soldier, as rusty as my swords, and who would take pity on me in the kind way you suggest? I have nobody to—ah—frill my cushions."

Rosebud's mother-in-law sighed gingerly, and said nothing. The blush was fixed in her cheek.

The tea table was brought in. Rose waited, making her flowers into bunches and rubbing the roses against her cheeks. The other two were long. Perhaps the colonel was wearying out her mother-in-law with his old Indian stories—and then Mrs. Kennedy would be tired and cross and she would suffer. Oh, if only she and Archie could have a home to themselves! No house could be big enough for them, as she had discovered. It was of no use bothering Archie; poor Archie, who could not help it and who must not know that his little wife was unhappy, that she could hardly bear the tyranny of his own mother. * * * She was not sorry—oh no, she dared not imagine she regretted having persuaded the colonel not to make them wait. He had said that it would be better for them to marry when Archie's success had made his position as good as his birth; he had looked higher for his little Rose. But she had been willful and had got her way, and—oh, she was not, would not be sorry. But it was very hard.

Her mother-in-law came in, followed by the colonel, who shut the door.

"I have some news for you, Rose," said he, standing awkwardly in front of his daughter. "Mrs. Kennedy has done me the honor to promise to be my wife."

"Oh, papa!"

Rose had succeeded in getting one minute alone with her father, and out came the reproach that had until then been only in her eyes.

"Aren't you glad, little one?" said the colonel.

"Glad?" repeated Rose with a gasp. She had not thought of herself—she could not stop to consider her own affairs. Only she thought of a white stone cross with "Until the Day Break" written on it—and of untouched memories. When the day did break, how would it be, after this—desecration? "Oh, papa, papa, how could you?" she cried, trying vainly to recover from the shock. The colonel winced. He could not say to her: "It's the only way I could think of to rescue my little girl from being bullied. And the dead will know why I do." But he laid his hands on her shoulders, remarking stoutly:

"So you don't approve, Rosebud? Ah, but you must remember that I have no little girl to look after me now. Think it over, think it over as we drive back. A stepmother can't

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"LONDON BLEND" a delicious English Breakfast Tea

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be as bad as—well, well, give me a kiss and be quiet."

"I am ready, good people," interrupted Mrs. Kennedy, tripping briskly in. "Run and put on your things, my dear, and let us make haste. We have news for Archie, haven't we? He will be so astonished."

"What has come over the colonel?"

"Heaven knows. Or perhaps the other place has more to do with it. He looks very queer."

"Some old bullet making itself unpleasant."

"More likely to be a new bullet, between ourselves. He looks as if he would be happy to put an end to himself. May mean to do it with a halter."

"What do you mean?"

"Why, he is always hooked on to old Mrs. Kennedy. Never comes to the club now. But if you'll look over there you'll see him three days a week, sitting in the middle of smoke and varnish, while the old lady frisks about with a teakettle."

The men grunted. They were smoking in the veranda of the Gold Club, a solid stone building with a tower, and they looked across the links to an imitative structure that the Ladies' Club had erected on a hillock. Ladies were not allowed in the club, and to avenge the lack of privilege they had made a law that no man should enter their domain. When they had parties, they handed teacups out the windows, but gradually the severity of the laws lessened, and fathers, brothers and other people's brothers were taken into the pavilion and given tea in the small, varnished room, with its rows of lockers and its smoking stovepipe.

Of late the colonel—the colonel who used to sit and smoke with his cronies in the club after his round on the long course—had been observed with horror pottering around the ladies, linked with Mrs. Kennedy, and stooping his head under the pavilion lintel. His old friends began to fancy that he was mad.

It was one fine afternoon, when the sea and the sky were blue and the gold links were a vision of green delight that six veterans sat in the club veranda and judged the colonel.

"It's all up with him," said one, pointing grimly with his pipe to two objects on a far hillock. One was the colonel, leaning heavily on his putter—and the other, skittishly clad in scarlet, was Mrs. Kennedy. "All up with him. An old soldier should be able to run away. However, he has gone down. He is going to marry her."

The other five started out of their chairs.

"Absurd."

"True," and there was a universal groan, in the middle of which a newcomer pushed open the glass doors and came out on the veranda.

"What are you plotting, hey?" said he. They made room sadly.



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"You have come home to behold strange signs and potents, Sir James," said the teller of the news. "our old flame—Mrs. Kennedy—is going to get married."

"What Annie Kennedy! She must be an old woman," remarked Sir James, settling himself in the midst. He was a rakish old baronet with a twinkling eye and a love of gossip. The smokers drew together and told the news, going on to other stories and the doings of ten good years.

"I shall go and call upon Mrs. Kennedy," said Sir James, with a chuckle.

III

Mrs. Kennedy sat in state in the peacock drawing-room. She had had many callers lately.

Rose was a meek accessory to these receptions. She shook hands and sang when she was requested and then subsided or managed to slip away to watch for glimpses of Archie across the street. Mrs. Kennedy did not require her presence.

The bride-elect was in all her glory when Sir James came to call. A party of lady friends had just departed, evidently struck by the youthfulness of their hostess. She had grown—or made herself—twenty years younger.



In
The
Evening

The family is in the living room—everybody tired of reading and talking. No one feels like playing the piano. A bored listless silence fills the room. One by one they give up and go to bed.

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The knowledge that they saw it brought a gleam of triumph to her eyes as she stepped forward to greet her old admirer.

"You are quite a stranger in Scotland, Sir James," she said.

"Who drove me away?" said he, dropping into the manner of a great many years ago.

Mrs. Kennedy laughed airily. She was looking her best, with a bright dab of pink upon either cheek. "The gout, I was told," said she.

Sir James edged his chair a little closer and chuckled. She was a fine woman, and had worn wonderfully. "So you are to be congratulated, hey?" he said. "I didn't know you were in the market. 'Pon my honor, it is too bad!"

Mrs. Kennedy's eyes were lit up with a sudden gleam.

The colonel was marching up the street to call upon his bride. He looked up as he crossed the road. Mrs. Kennedy was in the habit of stationing herself at the window when he was late, and of tapping archly upon the pane. Today he could not distinguish anything, for the afternoon sun was shining upon the glass. He walked down the entry and rang the bell. Then he was taken up. Mrs. Kennedy received him in the dressing-room. She greeted him with an embarrassed laugh that was strangely like a girlish giggle.

"I am so distressed!" she said.

"Anything the matter with Rose?" said the colonel, quickly.

"Oh, dear, no! This concerns you more—personally," said Mrs. Kennedy, hesitating.

"Personally?" The colonel could not help staring.

"The fact is," she continued, "I must throw myself on your generosity and beg of you to release me."

"My dear lady," began the colonel, anxiously. Was his only plan to be scattered to the winds? He had gone through so much already.

"Pray forgive me," said Mrs. Kennedy, with her handkerchief to her eyes. "I cannot tell you how culpable and vexed and sorry for you I feel. But, colonel, first love is unconquerable! And Sir James Dalrymple of Castle Whin has—has been to see me. We were attached to each other long ago, but he was not presumptively Sir James then, and there were obstacles. So I eventually married poor Mr. Kennedy. * * * But the lapse of years is a trifle—a mere trifle—and when I discovered that his feelings are still the same, I could not help letting him see the state of my own. With his position in the county and his gout, and the great, desolate house of Castle Whin, he requires a helpmate. You will be angry with me, colonel, but I could not resist his appeal. I feel for you most sincerely, and I trust that you will find some other who will be to you all that I might have been."

The colonel bowed solemnly over her hand and took his leave. He found it very difficult to express himself, and his only resource was flight. But on the landing his feelings got the better of him and he could not help indulging in an impromptu war-dance.

Rosebud happened to look over the stairs. Her voice rang down anxiously from above:

"Papa, what is the matter? Oh, papa!"

"Cramp, my dear, cramp," said the colonel, hastily.—Chambers' Journal.

FARMERS NEED COMPENSA- TION ACT.

To the Editor: Since the Workmen's Compensation Act provides insurance for only those hours when the hired man is at work, and charges the cost to the farmer, would it not be better for the hired man to buy his own insurance and be insured all the time?—C. R. W., Hanford.

ANSWER BY MR. PILLSBURY.

To the Editor: With relation to your correspondent who feels that it would be a better economic policy than the one followed by the Workmen's Compensation, Insurance and Safety Act if the farm laborers were required to insure themselves, not only during their working hours but during the whole twenty-four hours. This view is not an unnatural one for an employer to take who has not given the subject study and does not comprehend the fundamental principles upon which compensation was based, which are, briefly stated, as follows:

The State, for its own protection, says to every form of industry, except agriculture, that each such industry must take care of its own killed and wounded workers just as it takes care of the repairs necessary for its accidentally broken machinery; that it may charge the cost in to the operating expenses to be paid by the consumer if it wishes to, but that this burden must be placed upon the industry and at the time of the accident for the State's own protection against the poverty-making consequences of accident.

A second principle, equally fundamental, is that he who has contributed a hand, an arm, a leg, an eye, or life to an industry is as much entitled to be compensated for that contribution as though he had contributed labor or capital or raw material or anything else which enters into the production or distribution

of the products required to be consumed.

It is upon these foundation principles that the entire system of compensation for industrial injuries is based, and this system has now been adopted by thirty nations of the world and twenty-four States of this Union, and it is too late, even if it were advisable, to undertake to change this system to suit the views of your correspondent.

The time may come, however, when laborers will be required to take out accident insurance to cover them during non-industrial hours of the day. This has been accomplished in Switzerland by a combination of state, employer and employee, which covers the whole period of the industrial life of the employee.

Your correspondent will do well to elect to come under compensation, pay his little \$9.00 a year premium and thereby protect himself against lawsuits and his farm labor against the consequences of injury while at work on the farm. There are many millions of farm laborers in the world who are so protected, and the protection given has become just as much a part of the life of many European countries as their school system, and so it will be in California when the farmers have gotten a clear idea of what is expected of them, and why. Practically no large employers in the State are in opposition to the new law and as fast as men understand the law their opposition almost universally disappears.

A. J. PILLSBURY,

Chairman, Industrial Accident Commission.

Raising strictly fancy head lettuce gives W. D. McKnight of Kings county such a demand that the acre of this vegetable, cannot produce enough. This is in marked contrast to the soft brown, streaked product seen on most of our city markets, which sells because there is none better in sight.



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Home Economics.

Window Screens.

So great is the assortment of window screen in the shops these days that it is possible to fit almost any size window and this at decidedly less cost than having the screens made to order. The screens with the hardwood frames covered with the black wire screening are usually a trifle less expensive than the screens with the japanned metal frames; these latter screens, it is claimed, though of metal, will not rust.

Screen doors made of pine and finished well, come in a great many widths and heights, together with spring hinges and handles so that the doors are easily hung.

Another screen is the one that rolls up like a shade. It works on a spring roller and is made to fit almost any size window.

Home Use for Lemons.

Two or three slices of lemon in a cup of strong tea will cure a nervous headache.

Lemon juice (outward application) will allay the irritation caused by the bites of insects.

A teaspoonful of lemon juice in a small cup of black coffee will relieve bilious headache.

A dash of lemon in plain water is an excellent tooth wash. It not only removes tartar, but sweetens the breath.

The juice of a lemon taken in hot water, on awakening in the morning, is an excellent liver corrective, and for stout women is better than any anti-fat medicine ever invented.

A Grease Brush.

One of the most convenient articles in the cupboard is a 5-cent varnish brush, which is always kept in a baking powder can, containing an inch or two shortening. Being in tin, it is but the work of a moment to melt over the fire and it so satisfactory to paint your cakepans, loaves of bread, etc. Be sure to get a black-haired brush so if a hair comes out it is quickly seen.

Browned Flour.

Browned flour will impart flavor and coloring and make soups and gravies especially good. To brown flour, sift into a granite pie pan or flat pan, using about one cupful. Then place it in the oven to brown; it must be stirred and not allowed to burn. Remove from the oven and sift it as soon as it is browned evenly; keep it in a tin box or fruit jar. It is excellent for thickening stews and will always add flavor to warmed-over meats.

Why He Used Whitewash.

A physician tells a story of a man who moved into a dilapidated old cottage and was found by the doctor busily whitewashing it inside and out.

"I'm glad to see you making this old place so nice and neat," said the physician, "It's been an eyesore in the neighborhood for years."

"Tain't nothing to me about eyesores, the couple that lived here had twins three times, and I hear whitewash is a good disinfectant. You see, we've got ten children already."

"What was the basis of Mr. and Mrs. Futill's separation?" "Well, you know

their baby,—the one that was born last month?" "Yes." "Futill said he should go to Yale, and Mrs. F., who is from Boston, insisted on Harvard."—Sun.

ANTS IN THE GARDEN.

To the Editor: I have a great many small red ants in my vegetable garden and I am afraid there will not be much left of my seed if nothing is done.—J. C. C., Turlock.

[Have you ever caught an ant working on a seed? It is possible that you are more scared than hurt by them. However, it is easy to get rid of them in a small space like a house garden. Professor Woodworth of the University gives the following treatment for ants in gardens or houses:

We obtained by far the best results by the use of a very weak solution of arsenic and syrup. Most of the commercial ant poisons commonly known as ant pastes consist of arsenic and syrup, but are made very strong in arsenic. This kills the foraging ants almost immediately. We found by reducing the arsenic to between one-fourth and one-eighth of one per cent they would take large quantities of the material to their nests and feed it to the young, and the whole nest would be killed by slow poisoning.

The most convenient way of exposing the poison to the ants is to use a large jar with a perforated cover and within it place a sponge saturated with the arsenic solution. The ants will enter through the perforations in the cover, fill themselves with the arsenic solution and carry it to their nests. The sponge will hold enough poison to require two or three weeks to empty it, and before that time the ants will almost entirely disappear.

The number of jars to use will depend upon the abundance of ants. In the worst cases a half-dozen jars will serve for an ordinary sized house and lot, and if the ants are not very bad one jar may be enough; in such cases it is well to place it in the pantry or kitchen.

The same remedy can be used for all the native species of ants and will be more effective against them.

DROWNING LARGE ANTS.

To the Editor: Having read in your issue of January 31, Dr. Snowden's method of exterminating Argentine ants, it occurred to me that your readers might be interested in another method which I have found successful in getting rid of the large red ants so common in southern California. Whether or not this is the Argentine ant, I do not know. [It is not the Argentine if it is large.—EDITOR.]

The following method should recommend itself to anyone who might have compunctions against murdering the poor creatures or committing arson on their homes, inasmuch as it consists in simply inducing them to commit suicide. Take an ordinary drinking glass, fill it half full of water, and insert it in a small hole within a few feet of a hill or colony of ants, in such a manner that the rim of the glass will be flush with the surface of the ground. Pack the earth all around the glass so that the insects may easily walk right up to the rim from all sides. Then stand aside and watch. The first ant to notice the "improvement" in the community



Madam—

When the problem of "what shall we have for dinner" again presents itself—just remember what a zest

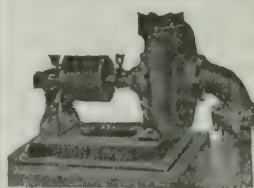
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PEERLESS IRON WORKS, Sacramento, Cal.

Mention Rural Press.

proceeds at once to inspect them. He hastens up to the rim of the glass, discovers the water, and looks for a way to get down. Failing this, he tries to reach it with his antennae, clinging on to the glass and straining far out and downward. But alas! the glass is slippery and smooth and the next instant he finds himself struggling in the water below. And so with all his comrades. I have seen the denizens of an entire hill precipitate themselves into the water in the course of a couple of hours, completely filling the glass with the wriggling mass. I have tried this on several different kinds of ants, but it fails absolutely on all but the big red ones.

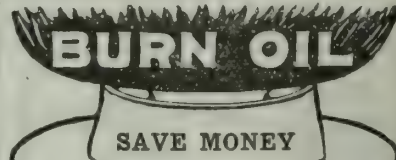
—D. F. T., Patterson.

A Good Offer.

Isaac's house was for sale, and he told his friend, Abram, about an offer he had had.

"Samuel Levinski saidt he vould gif me five t'ousand tollars vor idt."

"Huh!" Abram grunted scornfully. "He ain'dt got fife tollars to his name—he can'dt buy idt."



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"Vell I know he can'dt. But idt was a mighty fine offer."—Lippincott's.

Our Young Folks

The Green Blueberry.

Once upon a time there was a poor little berry who could not get ripe.

He lived on the blueberry bush, and on the bush hung a great many large fat blueberries, and of course he ought to have been like them; but because he grew too low down on the bush, so that the sun and air could not reach him, or for some other reason, he certainly remained a very green blueberry, although, to be sure, he felt blue enough.

All the other berries were unkind to him saying: "No one will pick you, Greenie. We, being so big and fat, shall all be picked and put into fine pies and cakes; but no one wants to eat hard, green berries, so you will be left."

"Yes," said one very big one, laughing,—did you ever hear a blueberry laugh? They have such a soft, juicy laugh,—"look at me, Greenie. Am I not a glorious berry, so fat, so big, so blue?" The poor little berry looked up longingly at her, when, puffing herself up more than ever in her pride, she—oh, what do you suppose happened to her?—she burst!

A few days after this dreadful accident two little girls came to the blueberry bush; and you can imagine how glad they were when they saw it. In a very short time they had every berry, and by mistake they had also picked the green one, too.

The children's mother was delighted when she saw the beautiful berries. "We will have a pie, and we will have a shortcake," she said to the cook; "and, Bridget, I will help you look the berries over." In doing this, she found the green one.

"Why, Eleanor, Margaret," she said to the two children, "here is a green blueberry. We cannot have him in our pie, can we?"

"Ha, ha!" laughed the other berries. "Of course you can't. Throw him away!" But the children's mother paid no attention to the rude little fellows.

"Mamma," said Eleanor, "that berry is the very same color as Belinda Marion's dress; and I will have it for a locket!" She ran to her new work-basket which had been given to her at Christmas; and from it she took a needle, which she threaded with soft green silk, just the color of the berry. This she drew through the berry. Next she drew out the most beautiful doll, with blue eyes which could open and shut, and with long, curling golden hair, and wearing a lovely green dress which really was the berry's color. The green silk was tied around her neck, and the despised berry was now hanging as a beautiful locket in the place of honor; and his little heart swelled with pride.

When the children's supper hour came, Belinda Marion came to the table, too, sitting in her own high chair, and she was very well-behaved and quiet, never speaking one word all through supper-time. The children had for their supper, bread and butter, milk, and each a small saucer of stewed blueberries; and, oh, how surprised those berries were when they saw what had become of their despised Greenie! They almost turned green themselves with envy. In fact, one might say they were almost "eaten up" with envy. And the green berry sat there in state, and saw them dis-

appear!

Nor was this all. The children soon went to bed, first putting Belinda Marion in her white crib, and leaving her in one corner of the dining-room. Belinda Marion shut her eyes directly her head touched the pillow, and was soon fast asleep; but the berry kept his one little eye wide open all through the grown people's dinner, which followed the children's tea. When the dessert came in what should it be but the blueberry pie! And the berries in the pie were astonished to find what had become of their green friend! But the berry smiled, and said nothing; and they, too, were all eaten before his very eyes. And he, the green berry, hung on Belinda Marion's neck for weeks, and in all probability is hanging there now. At least, the last time I saw Belinda Marion and her little mistress he was still there, looking very comfortable, and, if possible, greener than ever.—Selected.

Why Minnie Could Not Sleep.

She sat up in bed. The curtain was drawn up, and she saw the moon; and it looked as if it were laughing at her.

"You need not look at me, Moon," she said. "You don't know about it: you can't see in the daytime. Besides, I am going to sleep."

She lay down and tried to go to sleep. Her clock on the mantel went "tick-tock, tick-tock." She generally liked to hear it; and tonight it sounded just as if it said, "I know, I know, I know."

"You don't know either," said Minnie, opening her eyes wide. "You weren't there, you old thing; you were upstairs."

Her loud noise awoke the parrot. He took his head from under his wing, and cried out, "Polly did!"

"That's a wicked story, you naughty bird," said Minnie. "You were in grandma's room, so now!"

Then Minnie tried to go to sleep again. She lay down and counted white sheep, just as grandma said she did when she couldn't sleep. But there was a big lump in her throat. "Oh, I wish I hadn't."

Pretty soon there a very soft patter of four little feet; and her pussy jumped up on the bed, kissed Minnie's cheek, and then began to "pur-r-r, pur-r-r." It was very queer; but that, too, sounded as if pussy said, "I know, I know."

"Yes, you do know, kitty," said Minnie; and then she threw her arms around Kitty's neck and cried bitterly. "And—I guess—I want—to—see—my—mamma!"

Mamma opened her arms when she saw her weeping girl coming, and then Minnie told her miserable story.

"I was awfully naughty, mamma, but I did want the custard-pie so bad, and so I ate it up, 'most a whole pie; and then—I—I—oh, I don't want to tell, but I 'spect I must,—I shut kitty in the pantry to make you think she did it. But I'm truly sorry, mamma."

Then mamma told Minnie that she had known all about it. But she had hoped that her little daughter would be brave enough to tell her all about it herself.

"But, mamma," she asked, "how did you know it wasn't kitty?"

"Because kitty would never have left a spoon in the pie," replied mamma, smiling.—Little Men and Women.

Youngster's Admiration.

The admiration entertained by a Trenton boy for his uncle includes all

of the latter's attributes and even possessions which the uncle himself is not want to deem desirable.

"Uncle," said the lad one day after he had been studying his uncle in laughing conversation with his father, "I don't care much for plain teeth like mine. I wish I had some copper-toed ones like yours."—New York Globe.

Do You Know Better?

New York's public schools have about as many queer errors in their examination papers as other schools. The principal of one of the schools is having fun with his class over the three following mistakes they made in a recent examination!

"Grace Darling was a light house-keeper." "There are five continents,—a, e, I, o and u." "A centipede is a French measure of length."

Fortunate.

Secretary Bryan was listening with an inscrutable smile to the praises of a financial magnate that a Senator was singing at a dinner.

"He's the architect of his own fortune, too," said the Senator, "entirely the architect of his own fortune."

"Well," said Secretary Bryan, "it's a lucky thing for him that the building inspector didn't come round while the operation was going on."—New York Globe.

ANNOUNCEMENT

TO THE PEOPLE OF THE PACIFIC COAST

One of the most unusual opportunities for the people of the Pacific Coast to become joint-partners in one of the most firmly established and rapidly growing business firms in the West, is now drawing to a close.

Out of an authorized issue of \$1,000,000 of the 8% Guaranteed, Non-Assessable, Cumulative, Preferred Stock of the Owl Drug Company, but \$119,500 now remains unsold.

Practically nine-tenths of this opportunity opened to careful investors by the Owl Drug Company has now been taken up, only a little more than one-tenth of this exceptional guaranteed stock can still be secured by quick action.

The Owl Drug Company does the largest per capita drug business of any company in the United States. Its net earnings for 1913 were seven times greater than the sum necessary to pay its preferred stockholders the 8 per cent guaranteed interest on their holdings. The Owl Drug Company has no bonded indebtedness and for 20 years has enjoyed the distinction of never having missed a dividend day. Its total cash sales during 1913 were over \$4,000,000.

The Owl Drug Company began business in 1892, operating its first stores in San Francisco. It now has 20 retail stores in San Francisco, Oakland, Sacramento, Los Angeles, San Diego, Portland, Ore., Spokane and Seattle, Wash. In addition it does the greatest manufacturing drug business of any company west of New York. 8% dividends on its stock are paid on July 1st and January 1st of each year.

If you are seeking a safe, sure, sound investment and desire to become a shareholder in this wonderful business, quick action on your part will enable you to secure your part of this very limited block still on the market at par or \$100 per share.

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THE MARKETS

San Francisco, Feb. 25, 1914.

Cereals.

WHEAT.

Quite a lot of wheat has arrived from the north in the last few days, but this is mostly needed by the mills, and has had no effect on the local market. Prices here are firmly maintained, though there is no heavy buying and holders in the north maintain a firm attitude.

California Club, cttl....	\$1.60	@1.62½
Forty-fold	1.62½	@1.65
Northern Club	1.60	@1.62½
Northern Bluestem ..	1.70	@1.75
Northern Red	1.60	@1.70

BARLEY.

The barley market continues to weaken. There has been little trading in futures lately, and prices for the various options are lower, while the spot grain, with a greatly restricted demand, has again been marked down.

Brewing and Shipping. Nominal	
Choice Feed, per cttl....	\$1.05 @1.10
Common Feed	1.00 @1.05

OATS.

There is only a very limited demand for any description of oats, but supplies are not excessive and values have been held about up to the former level.

Red Feed	\$1.50 @1.60
Seed	2.00 @2.10
Gray	Nominal
White	1.35 @1.40
Black Seed	Nominal

CORN.

There is little Eastern corn coming in and no local stock offered, but supplies are sufficient for current needs. Prices on all grades stand as last quoted.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @1.82½
Eastern White	Nominal
Egyptian	1.75 @1.85
Milo Maize	1.75 @1.80

RYE.

There is no longer any demand worth mentioning for seed rye, and while a little fancy Canadian stock is held here at about \$1.60, general offerings go at a lower figure.

Rye, per cttl.....	\$1.45 @1.50
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BEANS.

Another general advance is noted in the bean market, covering nearly all lines. There is quite an active buying movement for this time of year, and with a steady demand through the spring well assured by the condition in consuming markets, stocks are expected to clean up rapidly. There is at present very little of any description scattered through the country, and dealers' stocks are not as heavy as usual at this season. Bayos and limas are especially strong, as limas have been moving east at a rapid rate, and Eastern stocks are well cleaned up.

(On wharf.)

Bayos, per cttl.....	\$5.40 @5.65
Blackeyes	4.40 @4.65
Cranberry Beans	4.00 @4.25
Horse Beans	1.90 @2.15
Small Whites	4.75 @5.00
Large Whites	3.60 @3.75
Limas	5.30 @5.40
Pea	3.20 @3.40
Pink	3.15 @3.40
Red Kidneys	5.15 @5.40
Mexican Red	4.50 @4.80

SEEDS.

The season for alfalfa seed is now about over and there is now little demand. Other lines are moving more or less, with the situation about normal for the season.

Alfalfa	12¼ @15 c
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3¼c
Canary	7 @7½c
Hemp	2½ @3 c
Millet	2½ @2¾c
Timothy	7¼ @8 c
Yellow Mustard	Nominal

FLOUR.

Flour is moving rather slowly, although the price remains firm at the figures named a few weeks ago.

Cal. Family Extras ...	\$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

San Francisco hay dealers report that the arrivals of hay during the week have again been in excess of the demands. Altogether, 2236 tons came in during the week, and it appears that most of this was sent in by the holders for sale on consignment. This has been thrown on the market for what it would bring, and the result has been a still further weakening of the local market. Consignments of alfalfa have been particularly heavy, but owing to the abundance of grass, there is very little call for it. There are several changes in prices, all of them downward in direction.

No. 1 Wheat, or Wheat

and Oats	\$13.50 @14.50
do No. 2	11.00 @13.00
Lower grades	9.00 @11.00
Tame Oats	10.00 @13.00
Wild Oats	9.00 @12.00
Alfalfa	8.00 @11.00
Stock Hay	7.00 @9.00
Straw, per bale.....	65 @ 90c

FEEDSTUFFS.

This is the off season in feeds, and there is not much movement in any of the items. The only price changes to be noted are in rolled barley and rolled oats, both of which are quoted lower again this week.

Alfalfa Meal, per ton....	\$18.00 @19.00
Bran, per ton	24.00 @25.00
Oilcake Meal	34.00 @35.00
Cocoanut Cake or Meal..	25.00 @26.00
Cracked Corn	41.00 @42.00
Middlings	33.00 @34.00
Rolled Barley	24.00 @24.50
Rolled Oats	29.50 @30.50
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

Notwithstanding the heavy rains and the holiday early in the week, the vegetable market is in fairly good shape, with practically everything firm in price and several lines marked up in price owing to the arrival of better stock. Asparagus is an exception to this, as the arrivals of more abundant stocks have brought the prices down from those of last week, as was to be expected. The demand for asparagus continues good at the lower prices. The heaviest asparagus shipment of the season was on hand for the market after the holiday, but was disposed of easily. Arrivals of good celery have been scarce and the price has doubled, or a little more than doubled, during the week.

Cabbage, per cttl.....	\$1.00 @ 1.25
Cauliflower, dozen	25 @ 50c
Green Peppers, lb.....	8 @ 10c
Carrots, per sack	40 @ 50c
Green Peas, Southern, lb.	5 @ 9c
Tomatoes, Mexican, box..	1.75 @ 2.25
Eggplant, lb.	15 @ 20c
Sprouts, lb.	4 @ 6c
Celery, large, crate.....	2.75 @ 3.50
Rhubarb, box	1.25 @ 2.00
Lettuce, crate	1.75 @ 2.50
Mushrooms, lb.	20 @ 25c
Asparagus, lb.	8 @ 1-

POTATOES, ONIONS, ETC.

The feature of the potato market has been the heavy arrival of northern stock. Of this about 10,000 sacks reached the market on Tuesday, but these were absorbed without difficulty and there has even been an advance for the choicest stock of Oregon. River potatoes are neglected in favor of the northern lines, and prices for the former are off 10 or 15c this week. Advices from Portland are to the effect that only 42 cars of onions were left in Oregon with the opening of the week, and higher prices were predicted.

Potatoes:	
River Whites	75c @ \$1.05
Sweet Potatoes, per cttl..	1.25 @ 1.60
Oregon Burbanks	1.00 @ 1.35
Onions: Oregon	3.25 @ 3.40
Australian	3.75 @ 4.00
Garlic, per lb.....	7 @ 10c
New Potatoes, lb.....	3 @ 5c

Dairy Produce.

POULTRY.

The poultry market has not been very active for several days, both supply and demand being limited. Eastern arrivals are small and California stock is not coming in very freely. Prices are unchanged except for young stock, all lines of which have been marked up.

Large Broilers	25 @30 c
Small Broilers, per lb...	30 @33 c
Fryers, per lb.....	25 @27 c
Hens, extra, per lb.....	18 @19 c
Hens, large, per lb.....	18 @19 c
Small Hens, per lb.....	17 @18 c
Young Roosters, per lb..	18 @21 c
Squabs, per doz.....	\$2.00 @2.25
Geese, per pair	2.50 @3.50
Ducks, doz.	6.50 @8.00
Turkeys, live, per lb....	20 @21 c
do dressed	23 @25 c

BUTTER.

The butter market is better supplied now than for some time, and prices have been dropping steadily, half a cent at a time, all week. At the lower figures, the arrivals are pretty well taken care of. Any further increase in receipts would probably be followed by a further drop in prices, as no shipping demand has yet developed.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras ...26 26 25½ — 25 25	
Firsts ...25 25 25 — 24 24	

EGGS.

Arrivals of eggs have been heavy this week, but the shipping out of several cars to British Columbia has served to steady the market, and although extras are off 1c from last week, other grades are unchanged. A singular feature of the market was the arrival of 300 cases from Seattle at the same time that heavy shipments were sent from here to British Columbia.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras ...22 22 22 — 21½ 20½	
Selected	
Pullets...20 20 20½ — 20 20	

CHEESE.

Monterey cheese, which was weak last week under heavier arrivals, is firmer again and has moved up a cent all around.

Fancy California Flats, per lb...	19 c
New Young Americas, fancy....	20 c
Monterey Cheese	17 @19 c

Deciduous Fruits.

The apple market is very quiet, with a steady but limited call for the various sorts. At this season the storage stocks are beginning to lose quality, and buyers seem to prefer oranges and tropical fruits.

Apples: Newtown Pippins..	\$1.50 @2.00
Hoover	1.00 @ 1.50
Oregon Spitzenbergs ..	1.40 @ 2.25
Oregon Ben Davis.....	1.65 @ 1.85

Dried Fruits.

Some little interest is being taken in raisins this week. A sale of 1912 and 1913 raisins, said to approximate 400 tons and to include the last large lot outside of packers' hands, was closed a few days ago. There is also some future buying of the 1914 crop at 4c for Thompsons and 3½c for Muscats. The Association is understood to have disposed of between 6000 and 7000 tons since January 1, the bulk of these going to distilleries. There is talk of turning over as much more for manufacturing purposes before the new season opens. There is also some buying of new

crop figs in the Fresno section, the figures named being 3½ and 3¾c. The New York Journal of Commerce says:

"Some offerings of future apricots are said to be making on the basis of 7½c orchard run, but no business is reported. Apricots on the spot here and for shipment from the Coast are in light supply and firmly held. The latest quotations on immediate shipment for the Coast were 13½c for choice, 14c for extra choice, and 14½c for fancy Santa Clara stock. There is said to be very little stock left on the Coast.

"Peaches are steady here and on the Coast, but there is little demand. California prunes are advancing owing to the limited offerings for shipment from the Coast. Straight carload lots of 40s are held at 6¼c, four-size basis, f.o.b. Coast, though some sellers might shade this ¼c. For 40s to 60s the general quotation is 6½c f.o.b., four-size basis, and in some instances straight cars of any of these sizes might be bought at this figure. For 70s alone 6¼c basis seems to be an inside figure, while 80s are held on a 6¼c basis, and 90s at 5c, f.o.b., for the four sizes. Some sellers are offering 100s to 120s at 3½c f.o.b. straight, while others want more money for these sizes. In spot prunes demand is fairly active in a jobbing way, and the tone on both Californias and Oregons is firm."

Evap. Apples, 1913	6½ @ 8 c
Apricots, 1913	10 @13 c
Figs: White	Nominal
Black	Nominal
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanias	4½c

Citrus Fruits.

The controlling factor in the market this week has been the weather, which has closed down a number of the southern packing-houses and has left dealers here more or less up in the air as to future supplies. Prices of navels have been advanced to meet the emergency, with the result that little business is being done. Whether or not the advance will be continued demands on further advices from the packing-houses.

Oranges: Navels	\$1.00 @ 2.50
Tangerines, crate	75c @ 1.25
Grapefruit, seedless	1.25 @ 2.50
Lemons	1.75 @ 3.25
Limes	5.50 @ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Aside from a few off-grade walnuts still in the hands of the Southern California associations, there is practically nothing in the way of nuts in the hands of either growers or packers. There seems to be nothing of interest in sight until speculations begin as to the size of the 1914 crops.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11¼c

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HONEY.

San Francisco holders of honey are slowly getting their stocks into consumption at previous prices, and no change is likely until new offerings begin to come in.

Comb, white	15	@ 16	c
Amber	11	@ 12	c
Dark	9	@ 10	c
Extracted: White	8	@ 9	c
Amber	6 1/2	@ 7	c
Off Grades	5	@ 6	c

BEESWAX.

The consumption continues about normal, and supplies are gradually diminishing, with prices firm owing to light arrivals.

Light	30	@ 31	c
Dark	28	@ 29	c

HOPS.

Considerable business at lower prices is reported from Portland, and there is some talk of still lower prices. Arrivals at San Francisco continue light, and not much business is being done here.

1913 crop	17	@ 20	c
1914 crop	14	@ 16	c

Live Stock.

The market seems a little heavy all round this week, with an easing off in prices in some lines probable in the near future. Some range and farm calves have been coming in the last few days, and dairy veal is now quite plentiful. The first carload of milk lambs has arrived and has been sold at from 17 to 18 cents.

Steers: No. 1	7 1/4	@ 7 1/2	c
No. 2	7	@ 7 1/4	c
Cows and Heifers: No. 1	6 1/4	@ 6 1/2	c
No. 2	5 3/4	@ 6	c
Bulls and Stags	2 1/2	@ 5	c
Calves: Light	8 1/4	@ 8 1/2	c
Medium	8	@ 8 1/4	c
Heavy	6 1/2	@ 7 1/2	c
Hogs: Grain-fed, heavy	7 1/4	@ 8	c
150 to 250 lbs.	8 1/2	@ 8 3/4	c
100 to 150 lbs.	8 1/4	@ 8 1/2	c
Prime Wethers	5 1/2	@ 5 3/4	c
Ewes	4 1/2	@ 5	c
Lambs	6 1/2	@ 7	c

DRESSED MEATS.

Steers	12	@ 12 1/2	c
Heifers	11 1/2	@ 12	c
Veal, large	12	@ 13	c
Small	13 1/2	@ 14 1/2	c
Mutton: Wethers	11	@ 11 1/2	c
Ewes	10	@ 10 1/2	c
Suckling Lambs	13	@ 13 1/2	c
Dressed Hogs	13 1/2	@ 14	c
Colts	25	@ 50c	
Dry	75	@ 2.00	

HIDES.

Some local hides are being sent East and the situation here continues quiet at the same old prices. California tanners are buying very little.

Heavy Steers, over 56 lbs	15	c
Medium	14½	c
Light Steers, under 48 lbs	14½	c
Heavy Cows, over 50 lbs.	14½	c
Light Cows, 30 to 50 lbs.	13½ @ 14½	c
Kip	14½ @ 15½	c
Veal	17½ @ 18½	c
Calf	17½ @ 18½	c

Dry Hides	25 1/2	@ 26 1/2	c
Dry Kip, 10 to 15	24 1/2	@ 25 1/2	c
Dry Veal, 5 to 10	29 1/2	@	
Dry Calf, 7 down	29 1/2	@	

Horse Hides—			
Salt: Large	2.75		
Medium	2.25		
Small	1.00		

WOOL.

The first signs of life in the California wool-growing districts is reported from Red Bluff, where at least one wool buyer has begun nosing about among the growers. In this city there seems to be no movement.

Northern mountain	7	@ 9	c
Southern mountain	7	@ 8	c
Defective	4	@ 6	c
Lambs	7	@ 10	c

HORSES.

The better figures realized at the local sales earlier in the month brought in heavier consignments than for some time, and this combined with the bad weather conditions caused a slight reaction. The prices realized last week were something of a dis-

appointment, and little effort is now being made to place further shipments on the market.

Heavy drafters, 1700 lbs. and over	\$275	@ 325
Light Drafters, 1500 to 1650.	225	@ 250
Chunks, 1350 to 1500.	200	@ 225
Wagon Horses, 1250 to 1350.	150	@ 200
Delivery Horses, 1050 to 1250	100	@ 125
Desirable Farm Mares.	75	@ 100

MULES.

1200 lbs.	\$200	@ 250
1100 lbs.	150	@ 200
1000 lbs.	125	@ 175
900 lbs.	75	@ 125

Plans are laid for a Table Grape Growers' Association of Fresno, Tulare, and Kings counties.

PUBLISHER'S DEPARTMENT.

The book "One Thousand Questions in California Agriculture Answered" is selling very fast, and we want it to go out faster. This book should be in every farm home because of its absolute necessity. Again we are anxious to have them out, because it will save our readers from asking the same questions over and over again. For instance, one party last week sent us a list of six questions he wanted answers for; of the six, five were answered in the book. Our mail is growing very heavy and it is becoming a real tax on the editor to answer all these letters, because so many of them cannot be published over and over. Uncle Sam delivers mail to us five and six times daily; in each of these deliveries we receive some queries, sometimes as many as twenty at once. When you are in trouble you need an immediate reply, which cannot be given from this office. Send for a copy of the book and have it ready.

The rains of last week have caused the business department of this journal a great deal of inconvenience in getting out this issue. No citrus reports have come through from the south owing to delayed mails. Up to Wednesday noon no mail has been received from south of the Tehachapi since last Friday. Some of our regular advertisers whose copy was late in getting started from the south have been left out, and others may have announcements in this issue which should have been changed. We have done the best we could and will have to be content.

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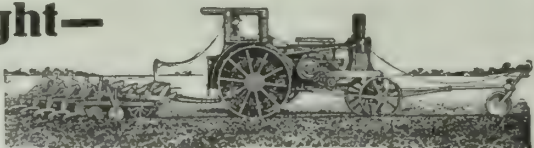
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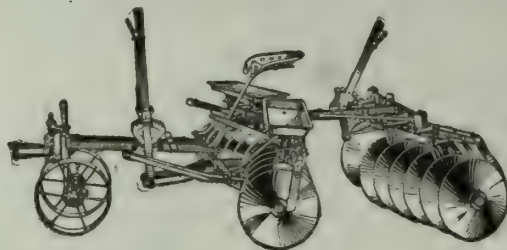
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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 10.

SAN FRANCISCO, SATURDAY, MARCH 7, 1914.

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E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Mar. 3, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.34	27.68	32.28	60	38
Red Bluff	.00	29.61	17.98	70	40
Sacramento..	.00	18.00	14.22	64	40
S. Francisco..	.08	26.88	16.71	66	48
San Jose.....	.02	17.54	11.99	72	36
Fresno.....	.00	9.93	6.64	72	40
Independ'ce ..	.00	11.42	6.49	68	28
San L. Obispo	.00	28.81	14.48	74	44
Los Angeles..	.00	22.04	11.27	78	50
San Diego.....	.00	8.49	7.34	68	48

The Week.

Well, just look what has got us now! Three weeks ago we were hitched up to a train of tractors and had a great joy ride in anticipation, as readers must admit that they remember. It was very fortunate that we enjoyed that ride in anticipation, for that was the only kind of joy there was in it. A piece of climate which belongs at the mouth of the Columbia river, slid down the meridian somehow and anchored itself in the San Joaquin valley until it made the rich, light loams of that region look and feel like the contents of a mush-kettle. Our tractors detracted and we had to be extracted by a hook from a passing aeroplane. While we were dangling from that scudding vehicle we remembered a thing we read, in a wise Eastern journal a few days before, to the effect that the interest in tractors was increasing vastly west of the Missouri river because the farms were large and level and the soil was firm and smooth—all of which is quite true, but remains true only while humid climates are stopped at the border. Our soils are so deep and light and permeable that they cannot throw off heavy rain, but drink themselves full of it and then they have no hard bottom for anything—even for a dirt highway. This is the very reason why these soils are so productive and valuable—but when it comes to tractors; well of course they are all right when the Western soil and climate work together, but when the climate shifts, as it has this year, they have to wait awhile. It is simply a rejuvenation of an old English proverb that "no man can farm against the weather"; with this modification, that we are fast learning to farm against the weather by means of irrigation, frost-protectors, etc., but still we cannot farm against the weather that does not belong here—even tractors cannot do that. And so the tractor thing has to be done over again at some other time.

Horses for Our Kingdom.

While we were being snaked out of that deep Fresno loam by the airship and musing the while about that impious little Richard Third who, failing in his schemes of detraction, had shouted his kingdom for a horse, we caught a wireless from our resourceful publisher that we should have our joy ride just the same, even if he had to get horses with feet a yard square, so that they could safely prance upon the mellow landscape. And, sure enough, here they are on our first page this week; capable of trampling our journalistic surface into a rich muck, fit for the planting of water lilies, and they are calling to us to climb aboard and ride as best we may; and it will surely ride well when the ground surface is as represented in the foreground of the picture.

Note the calm alertness of these splendid beasts. The owner tells us, in confidence, that he secured this attitude from the trio at the same moment by pinching a pig until it squealed, in the vicinity of the camera. This was the closest imitation he could produce of the joy-cry which we would voice at seeing them, and defended his trick by the assurance that the highest art is akin to nature. Here, then, is our present joy-riding automobile with the tonneau high-barred so that no excess of motion or of emotion shall fling us from its embrace. In gross weight, the outfit might compare well with some of the tractors, but in dead weight it would be vastly less, for the resilience of these agile, springing animals puts wings upon their gravity and keeps them flying across mellowness in road or field which would deny transit to a tractor. Therefore we count ourselves very sure to make the trip this time—sure to be drawn through anything this side of a tule slough; sure to cross even reclaimed land, for have they not their tuleshoes of nature's growing? It is, of course, a great advantage, not only in the crossing but in the effect upon the mellow land which is worked with them, to have their weight borne and their leverage fulcrummed upon a wide space of the surface. This fine trio shows well draft mares, as they earn their sustenance by great amounts of farm work which they can easily achieve. If kindly handled, as this team evidently is, they will keep a farm moving while they are discharging also their higher mission in the reproduction of their kind. Depreciation, through wear and tear, is the unavoidable fate of the tractor; appreciation or constant gain, through the glorious function of maternity, is the economic aspect of the draft mare.

Bare-Back Joy-Riding.

But the publisher has also whistled up to the editorial chair a bunch of bare-backs on other pages of this issue, and what backs! If we only had the art of the circus rider to keep sure footing on those broad, swelling cushions of flesh!—but we must admit we never did enjoy being spread upon the back of a draft horse. It is not really comfortable to carry your knees a yard apart, and the movement of the great mounds of mighty muscle beneath you is a reminder of the merciless swell of the vasty deep, and induces a new type of mal de mer—whether the animal happens to be of that gender or not, it matters little; and yet—well we are too much of a land-lubber to try navigation on the back of a stallion weighing a ton or more, so we cannot speak from any

knowledge of that. We are content, therefore, to admire these great, placid mountains of weight and strength just as the reader does, and not discuss them farther. Our associates on other pages of this issue have written long and well of the fact that the horse of the right kind remains, in the face of all rivals, a force still to be reckoned with in our farming; and not only that, the fact is also fitly emphasized that the horse is a force to be admired and promoted and horse growing remains an opportunity to which intelligent and generous attention should be given. The fact which one of them mentions, in the advantage of growing flesh which is worth more per pound than all other flesh, should attract the notice of those who are trying to make the best use of land and forage. It is strictly true and does not apply alone to the production of classy breeding stock. We once saw mules selling in Corning for more per pound than turkeys; why, therefore, should growing 12 or 20-pound turkeys be called intensive and be the hope of the district when a thousand-pound mule is worth more per pound! But these are serious matters which our associate writers sufficiently expound in this issue. It is our duty to provide the frivolities of the subject.

The Horse and the Girl.

It may take a good deal of yeast to make this draft-horse issue rise. But as we understand the Presidents' latest dispatch to Villa it is not intended that our policy shall be always ponderous and peaceful, but under certain circumstances may be yet lightened up with gun-flash and flag-wave. Such also is the intention of the publisher of this journal; this issue is not all draft-horse, but may be horses of other mold and temper. And so we wave all his mighty bare-backs aside and go to Judge Bridgford and beg from him an American Saddle Horse of the highest type; one which can take all five saddle-gaits and one more—the gate to her father's farm yard. And so we are standing now at the edge of the lawn where the maple is just shooting its graceful corymbs of bloom, looking up to a tiny aperture beneath the eaves whence comes ere long a bird note of song followed by words—simple words, but words with thrills for listening ears: "Good morning, Jack: in just one minute." The gate of heaven, for a young man, and—in just one minute! Meantime her little brother leads up her glistening pony; gives you the bridle and, both bashfully and considerately, withdraws—to his watching-place behind the spicy box-bush. The bird song seems to approach, for it comes now through the open doorway; there is a rushing patter on the curving stairway, a swirl of fabrics, a cloud of light perfume and a shower of gladsome words from out of which, amazements all to you, there appears a small gloved hand which you press in silence—for the thousand words which you have been carefully comparing since sunrise refuse to come to your aid, through jealousy of each other. You seize the hand; you see lustrous turquoises beneath dark arches; ruby flashes beset with pearls; curves of alabaster touched by rosy-fingered dawn, and your ears still ring with the rippling music of her words. You blush hotly as you distinguish terms of endearment in their cadences and look up to find her twittering to her pony and fondling his neck with the hand which you just pressed; and you see, in the other hand, a dainty riding-whip and a fold of the long, dark green riding-habit. Then a tiny

boot-heel appears; your hand goes beneath it, and the whole rapturous phenomenon floats aloft, poises and finally nestles gracefully on the pony's back—as a dark wood-dove alights and preens itself upon a mound of mistletoe upon the broad branch of a forest oak!

But why go we farther: are not subsequent events and sensations written ineffaceably in the memories of all of us older ones? Is there anything of present time to compare with the horses and the girls of half a century ago? Is there anything in khaki, short-skirt, bi-furcation and quirt which compares with the contents of the side-saddle of the olden-time? It is not for us to question the tastes of the blustering youth of the present day, but the old boy requires a queen for worship, and to him a queen can only appear beneath a nodding plume and with the envelopment of a flowing robe.

Is Buggy-Riding a Lost Art?

And then there is another kind of horse which cannot die out of the world—that is, not while the old boys live. What is there in gasoline which can be counted perfume sweet to the nostrils of present youth as the odors of the new buggy, fresh from the hands of strippers, varnishers and trimmers, were sweet to the senses of the youth of his fathers and grandfathers day? Woe be to the thoughtless bystander who tried to balance his foot upon a shiny wheel-spoke during roadside conversation. And what a robbery of the mother's linen closet to get sheets to cover from the dust, this pride of the first born of the farm. Of course the motor for this masterpiece of the wheel-wright, blacksmith, painter and trimmer had been for several years growing to the measure of this vehicle. He had been, in fact, sired and dammed for it; fed and groomed for it; shod and harnessed for it; has been known for long at local fairs and elsewhere in the neighborhood as Jack's colt which was only waiting for a trousseau to make his debut as a gentleman's driving horse. And now, as crops are good, the old farmer agrees to stand for the outfit, and the beautiful bay gelding approaches his apotheosis. But, despite his pride in his horse and in his caparisoning and furniture, Jack has never looked upon the establishment as an end in itself, but merely as a means to an end. He has been shy, wary and distrustful of self, as are most rural youths, and therefore has been conducting for some time a courtship which did not get anywhere; now will this notable achievement of his, in horse and running-gear, pull him out of his perplexities? A horse and buggy are sometimes vain things, for Evalina had sent away that city chap who tried to capture her that way, but put himself out by putting her in on the wrong side and tramping on her feet in climbing over her. Jack was sure that he knew better horsemanship and ladyship than that, and so the gelding, with his eyes on the distant hill tops, with sunbeams glinting from the polished spokes and with a ribbon fluttering from the whip-stock, took Jack a-flying to the green grassy hollow where Evalina's broad acres spanned the valley bottom.

Oh the bliss of a buggy ride beneath the spreading trees of the river-drive with the gurgle of the stream for a rich second to the rather shrill music of the new wood and leather as they, too, are learning to know each other. Altogether they constitute a symphony as the horse walks through the alternations of shade

and sunlight, during the long summer afternoon along the river drive. Oh the charm of the girl in glistening white duck, with sailor blouse, cut just a little low and with hair wavy to a low knot—breaking free just a little since she has removed her hat and is playing with the ribbons thereof that she may seem sufficiently distant and preoccupied.

Think of it all, you Jacks of long ago! Can you find anything in the chug of the motor or in the motoring veils and goggles to compensate you for the sights and sounds, the lightness of life, the courage for the future which came to you during that buggy ride in your youth? And did you not nearly choke that dear young horse of yours with sugar in the hope that he too might realize some of the joy of being alive in the world!

Queries and Replies.

Querists must submit full names and addresses.

Who Has the Golden Prune?

To the Editor: Can you tell me if the Golden prune is a good prune to mix with the French prune or the Imperial prune to act as a pollinizer? It has been called to our attention and not having any experience with this Golden prune we could not pass judgment. At what time does it bloom? The farmers in this section seem to think it is a good prune to mix in among the other prunes. Information will be highly appreciated. Can scions be procured of the Golden prune?—E. B., San Jose.

We do not exactly know whether the Golden prune is coincident in blooming with the French and Imperial, although presumably it is, or at least there is not likely to be much variation because the Golden prune is of the domestica family and their blooming, so far as we have observed, synchronizes well. The Golden prune is an Oregon seedling, said to have originated with Seth Lewelling, Milwaukee, Oregon, from the seed of the Italian prune. It must be a very old variety, for Seth Lewelling has been dead more than twenty-five years if we remember correctly. Why it is that this variety, which had a good name during his time, has been so long in securing recognition from planters, we cannot explain. It seems the way to reach definite conclusion about it is to inquire until you succeed in finding some grower in your vicinity who actually has this variety and then its behavior as related to other varieties in point of blooming can be readily ascertained by observation. We assist you toward this demonstration by asking all readers for information concerning the variety.

Sap-Flow at the Root Crown.

To the Editor: Our almond trees? The trees are old but in excellent condition but we have lost five this year from the sap running out near the ground. It forms a large puddle and in a short time the tree dies. As we cannot find what causes it we appeal to you.—L. C. L., Biggs.

Sap-running and gumming is not often a disease of itself, but is generally a sign of disease or injury. First, clear away the approach to the inner bark at the point of exudation and see if the bark is brown and dead and whether the new wood under the bark has been attacked by borers which at this time of the year you will find in the wreckage they make. If you do not find such things uncover the main roots and see if their bark is healthy or

if it is fermenting, as the smell will indicate. There will probably be considerable injury from sour sap in this year of much rain and standing water in the soil. The saving treatment for such trees, in case the injury has not gone too far, is a severe cutting back of the top of the tree.

Pruning Neglected Vines.

To the Editor: I have rented for one year only a vineyard of wine grapes that was not pruned last year. Can you tell me how to prune them to get a crop this year. They are 9 years old and in fairly good shape.—W. M., St. Helena.

If you wish fruit this year you must save the lowest cane which grew last year; shorten that to save the two lowest buds and cut away all the two-year old cane which grew beyond the point where it started. You can prune the vine just as you would have pruned it the year before, but if you do that you will get cane growth where it ought to be but you will get no fruit this year. You will get a great break of new canes from the old wood probably and should rub off all but the best ones for the subsequent building of the vine.

Spraying for Curl Leaf.

To the Editor: In January I sprayed my orchard of assorted fruit trees with Bordeaux mixture. In one of your articles you state that it would be good to spray later on with a solution of lime and sulphur. Last year some of my peach trees were attacked by the curly leaf. At what time should I make the second spray?—READER, San Francisco.

Spray at once unless you do not care whether you kill the fruit or not. Spraying can be done with lime-sulphur of proper strength (according to the directions you get with it) after the bloom buds begin to show color but open bloom will be in danger. This will hit the peach moth as well as the leaf-curl.

Will Sulphuring Be Ruled Out?

To the Editor: I am asking for information regarding sulphuring fruit for drying. Is there a law in affect or likely to come in affect soon that will interfere?—G. W., Bellota.

The department order against sulphured fruit which was referred during President Roosevelt's administration to the Referee Board appointed to consider it; still remains suspended, because that referee board has made no report. If it should report and the report should sustain the regulation, it is probable that it will either be made very soon or else made operative at some considerably later date, because the Referee Board knows very well that it would not be fair to Californians to interfere with the sulphuring during the preparation and sale of a crop. As to the chances of such a report appearing, we have no information whatever.

Treating Vine Stakes.

To the Editor: Do you believe that an asphaltum-crude-oil-coated-stake would be injurious to young vine roots one year old?—SUBSCRIBER, Martinez.

No; and we are not sure how much good it will do the stake. Whatever preservative effect there may be will be increased by treating the stakes some time in advance and allowing them to dry thoroughly in the sunshine. The same process will also set free some volatile matters in the oil and remove all danger of injuring the roots.

Spraying for Walnut Blight.

To the Editor: Will you kindly inform me through your paper what time of the year is best to spray walnut trees for blight; also what is best to spray with?—P. R. A., Cupertino.

[If you spray at all, get ready now to do it thoroughly during the next few weeks. To decide whether to spray or not read carefully the following account of experiments by the University Experiment Station by Prof. R. E. Smith, under whose supervision the work was done.—EDITOR.]

WHAT THE BLIGHT IS DOING. There are many orchards of thrifty, large seedling walnut trees in the State, particularly in Santa Barbara, Ventura, Los Angeles, and Orange counties, which would be much more profitable than at present were it not for the attacks of walnut blight and aphid. The development of new walnut varieties more resistant to blight presents no relief to the owners of these groves, since most of their best walnut land is already occupied by large trees, and these trees, moreover, are of a good commercial type and would yield very good returns save for these two pests. The only apparently feasible means of combating blight and aphid on such trees lies in the development of some practical spraying method.

The necessity of controlling aphid as well as blight is apparent to every walnut grower, since this pest has in recent years become really more serious than the much dreaded blight. Spraying experiments carried on by this Division several years ago seemed to show the impracticability of controlling blight by spraying, on account of the time and expense required for treating such large trees by ordinary spray methods. Recent developments, however, in sprayers and nozzles have made it possible to spray large trees more quickly and cheaply than could be done a few years ago, and we therefore decided last year to try out again the possibilities in this direction. In this connection a considerable acreage of walnut trees was sprayed, using various methods and mixtures. As a result of the work, it may be said in brief that one method gave particularly promising results, especially in the control of the aphid. This method consisted in spraying the trees, while they were in a dormant condition, with lime-sulphur solution.

EFFECT ON BLIGHT.—The results of the spraying upon the walnut blight were difficult to establish on account of the slight occurrence of the disease in the sprayed districts during the past season. In this respect the work was inconclusive, although there appeared to be at least some blight control by the lime-sulphur spraying. It is further to be said that there is some experience to indicate that continued spraying with the lime-sulphur for two or three seasons gradually decreases the amount of blight.

EFFECT ON APHID.—Walnut aphid has in recent years become a worse pest than blight in many of the most important districts. This insect spreads the blight and multiplies its infections by carrying the germ as it crawls about the trees. Further, it reduces the vitality of the tree, checks its growth, reduces the size and weight of the nuts and contributes to the occurrence of "perforation," "stick-tights" and other conditions which decrease the crop and increase the cost

of handling the nuts. The effect upon aphid of spraying trees with lime-sulphur during the winter time has been well marked in our work during the past season. Well sprayed trees remained comparatively free of aphid long after the insect had become abundant on unsprayed trees. The nuts of sprayed trees were larger and cleaner, the foliage cleaner and more vigorous looking and the growth of the trees continued later in the season. The spraying was done in each case upon a few rows surrounded by unsprayed trees and from the latter the aphid finally spread to some extent to the trees which were sprayed. It is reasonable to expect that if whole orchards had been treated the aphid control obtained would have been still better. The results of these experiments were so promising that we feel justified in carrying the work farther and urging growers to take up the work on their own account during the coming season.

FORMULA.—Our best work was done with the following mixture:

Commercial lime-sulphur solution 5 gallons
Quick lime 25 pounds
Water 95 gallons

The lime is slaked, strained and then added to the mixture. So far as we know the addition of the lime is not necessary to the effect of the spray, but this was added in order to make it easier to see it upon the trees. The trees are usually large and without the addition of lime it is very difficult, especially for inexperienced workmen, to cover the trees thoroughly without missing more or less of the twigs and branches.

TIME OF SPRAYING.—The work was intended to be done while the trees were in a dormant condition, i. e., during the months of February and March. The solution burned the foliage severely if any leaves were out when the work was done, but it is possible that the aphid is more susceptible at this time.

OUTFIT.—In order to spray by this method, a power outfit must be used which will maintain a constant pressure with two lines of hose of 200 to 250 pounds. A pressure of 200 pounds at the very least is necessary in order to cover the tops of tall trees thoroughly by this method.

In regard to nozzles, our best results were obtained by spraying the trees with the so-called M. A. C. nozzle—a special nozzle made in the East for this sort of work. Some preferred using an outfit with two lines of hose, one man spraying the upper part of the trees with this nozzle while the other sprayed the lower parts with an ordinary Bordeaux or Cyclone type of nozzle. The largest walnut trees can be sprayed entirely from the ground by the use of the M. A. C. nozzle if the proper pressure is maintained.

METHOD.—The whole success of the work depends upon thoroughly coating the trees out to the tips of the smallest twigs with the spray solution. This, with large walnut trees, is a somewhat difficult and laborious task and also an expensive one. By using the type of nozzle suggested, however, and working with intelligence toward covering all the growth quickly and at the same time thoroughly, workmen can acquire much skill in this respect and the work can be done economically

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REX LIME AND SULPHUR SOLUTION

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Tetley Block, Riverside, Cal.

enough to more than justify its expense. Herein, however, lies the whole secret of the operation: that is, spraying rapidly and yet thoroughly.

AMOUNT OF MATERIAL REQUIRED.—In our work last winter the amount of material used varied in different places from 25 to 67 gallons per tree. These were trees of varying size, but it is still to be considered that as the work progressed and the workmen became more experienced, it became possible to spray larger trees with a smaller amount of material and at the same time do the work even more thoroughly. It may be said upon this point that about 25 gallons of spray to a tree will be required to cover fair to middle-sized walnut trees thoroughly—that is, trees of average size up to about ten years of age—while large trees will average about 40 gallons per tree.

TIME REQUIRED.—With a power sprayer having three men on the outfit and another to mix, or seven men to two outfits, we averaged about 85 large trees per day to each outfit. In one case an average of 110 fair-sized trees per day was made, while in another case 40 per day was averaged for trees of the very largest size. The time required varies naturally with the facilities for loading up. In our work the spray outfit went after its load each time to the mixing station and the distance thus covered varied in different places. A little time could be saved profitably in extensive work by hauling or piping the mixture out to the spray rig in the orchard.

EXPENSE.—Materials were purchased at a price of \$10 per 50 gallon barrel of commercial lime-sulphur solution, and \$1.10 per hundredweight for lime. On this basis the spray in the proportion recommended above cost \$.01275 per gallon. The expense of application was estimated on the following basis for each power outfit:

	Per day.
Four men at \$2.00 each.....	\$ 8.00
Two horses at \$1.00 each.....	2.00
Depreciation of outfit.....	2.00
Oil and gasoline.....	1.00
Total	\$13.00

On this basis the expense of application per gallon varied from \$.004 to \$.007. Assuming an average expense of application at \$.00525 and that for material at \$.01275, we get a total expense of \$.018 per gallon on the tree. At this rate, 25 gallons per tree would cost \$.45, while 40 gallons would cost \$.72 per tree, total expense of material and application.

CONSIDERATION OF EXPENSE.—It will be seen that the cost of this work is by no means prohibitive if even a moderate degree of blight and aphid control be obtained. It is also to be considered that beneficial effects would almost certainly be cumulative, so that after spraying trees for two, or at most three, successive seasons the work could very probably be discontinued for a year or two without throwing the trees back into as bad condition as they were in the beginning.

Furthermore, it is altogether probable that the cost estimated above could be reduced to a considerable extent by carrying on systematic work on a large scale. In the expense for material and labor the cost of the commercial lime-sulphur solution amounts to an average of about 55% of the total cost. The labor item

averages about 30% of the total and the lime makes up the remaining 15%. It is probable that the lime could be omitted altogether when the workmen became skilful enough to spray the trees thoroughly without such an indicator to make the material more easily seen; this, so far as we know, is the only object of using the lime. The lime-sulphur solution is estimated at the prevailing retail price and it is possible that by buying in large quantities (for instance, through walnut associations), a better rate could be obtained. It is also possible that the associations or even the growers could prepare the materials themselves at a lesser cost than that estimated. The labor item will be reduced as the workmen become more skilful and could also be lessened to some extent, at least in large work, by arranging to deliver the material to the spraying outfits in the orchard more rapidly than was done in our experiments. Two experienced men could spray and run the outfit, rather than the three which we have estimated. One man could also mix the spray for a number of outfits. The amount of material used per tree can also be reduced somewhat as the workmen become more experienced. Altogether, it appears to us possible that the expense of spraying trees of average large size by this method may be ultimately reduced to about 50c per tree. We do not, however, look for much further reduction than this, unless some much cheaper spray material is found to be effective. The work can not be done properly without using comparatively large amounts of time and material. At \$.50 per tree, a very moderate degree of success in aphid control alone would be a most profitable investment in the increased growth of the tree and yield of nuts, as well as the improvement in quality and reduction in cost of handling the nuts.

FURTHER WORK.—We recommend to large growers and associations especially that work along this line be taken up during the coming season, in order to test more fully the value of this spraying. We recommend that entire orchards or blocks of trees be sprayed, in order that a more complete test may be obtained than that which results from spraying a few trees or rows in the midst of other unsprayed trees. We do not guarantee spectacular results from such work, but do believe that if it is done thoroughly the effect will more than justify the expense. On the part of the University we expect to continue experimental spraying another season, testing some other promising materials, and will also agree to furnish co-operation to all who undertake the work to the extent of general oversight, information and suggestions. We should also be glad to take up the matter of the purchase of apparatus with all who contemplate walnut spraying, in order that they may obtain the right sort of appliances and have them in ample season.

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State Funds for Farm Loans.

To the Editor: Enclosed find a newspaper clipping of recent date on which I should like a little information. In your issue of January 24, 1914, Mr. J. L. Banden of Benicia has a splendid article on "Pooling Issues for Prosperity," and in referring to Uncle Sam's postal savings money I am wondering if he didn't go farther from home than was necessary in looking for the money. What's the matter with the state drawing 4 or 4½% from \$10,000,000 which the bankers so gladly pay 2¼% for and then loan out at twice and thrice that much to the real owners of the money? Is it because the money must be available at any moment? I am sincerely asking for information on this subject. Can you give me the correct answer?—READER, Cupertino.

The following is the Associated Press dispatch to which "Reader" refers:

SACRAMENTO, Jan. 30.—The actual cash in the state treasury vaults today reached the low water mark of \$220,000, the lowest point in many years. At times there has been as much as 6 million dollars in the vaults.

But this does not mean the state is poor. There is \$9,909,610 of state money loaned out to banks at interest which State Treasurer Roberts can call in at his pleasure. This is earning for the state an interest rate better than 2¼%, bringing to the state \$212,000 yearly.

Altogether, Treasurer Roberts has in available cash \$10,624,929.60. Some of the banks are now offering 2½% to retain the state money.

[You are right in your inference that the state gets low interest because it reserves the right to call in the money at any time. It had to call in a million or two last fall, if we remember correctly, to meet Panama-Pacific bonds, etc. But still there is no reason why farmers' banks organized as fully as old line banks are, could not get the state money just as they do and by having their own reserves get the advantage of the same low rate. As for the state loaning to farmers individually for the sake of getting more interest on state funds, that is another question, which we have not time to argue now. Briefly, the way to get the funds which the state now puts in banks is to get a line of short-loan farm banks, organized and fortified just as the commercial banks are.—EDITOR.]

BETTER MARKETING INSTEAD OF LOANS.

To the Editor: President Wilson is quoted as saying, in reference to the suggestion that the government surplus funds be loaned to the farmers at 3% on long time, that he does not think the farmers are entitled to any special favors. Yet he does not object to the government loaning its surplus to banks at 2%.

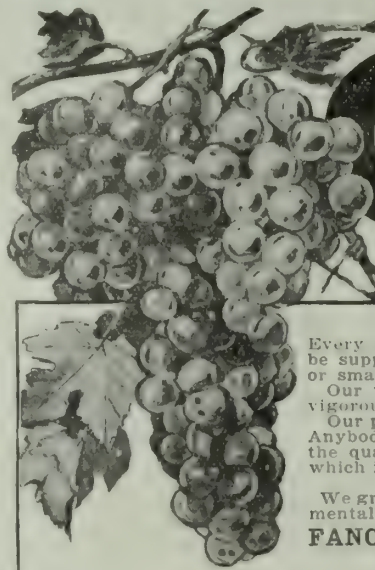
What the farmer requires is a fair price for his products based on the cost of production and a voice in making the price, then he would not need

to borrow from the government or any one else. Co-operative method will solve the problem in the United States as it has done elsewhere. Racial antagonism is the stumbling block at present.—SAMUEL HAIGH, San Jose.

[All right—but, as we have remarked before, there has not been any co-operative marketing elsewhere without capital to do it with. You cannot ship a carload of spuds without capital. Where will you get it and at what rate—unless you happen to be forehanded yourself, as very few are. Co-operative finance is the basis of all other co-operation which gets all that belongs to it.—EDITOR.]

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To secure a preparation that when applied to trees will prevent rabbits from gnawing the bark, mix four pounds each of sulphur, yellow ochre, flour and linseed oil; four ounces each of turpentine and asafoetida; one pint of alcohol and six eggs. Stir these materials with enough buttermilk to make a thick mush; then add sufficient sweet milk to make a thin paste, and apply with a brush.



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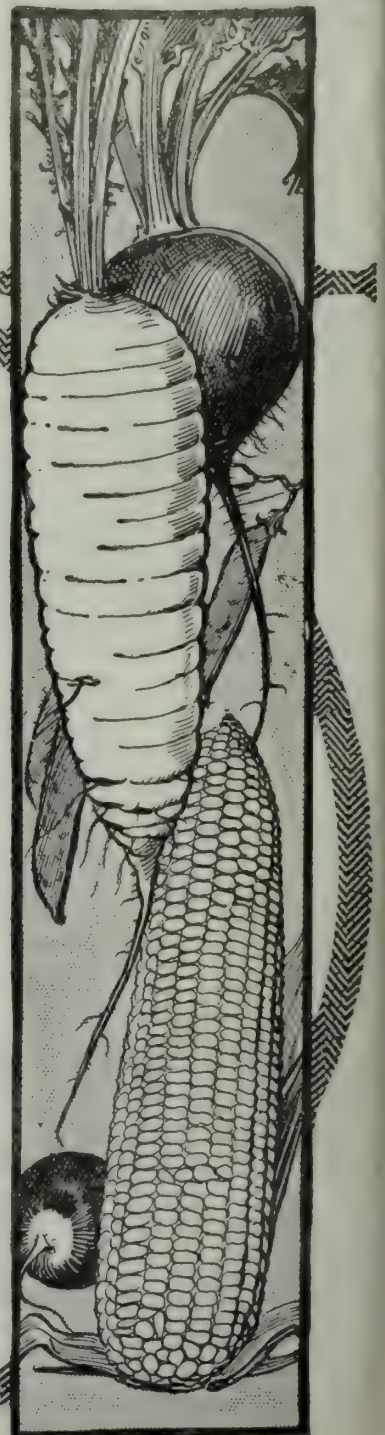
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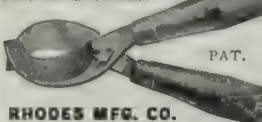
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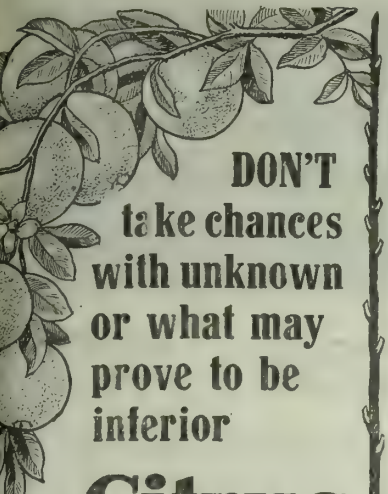
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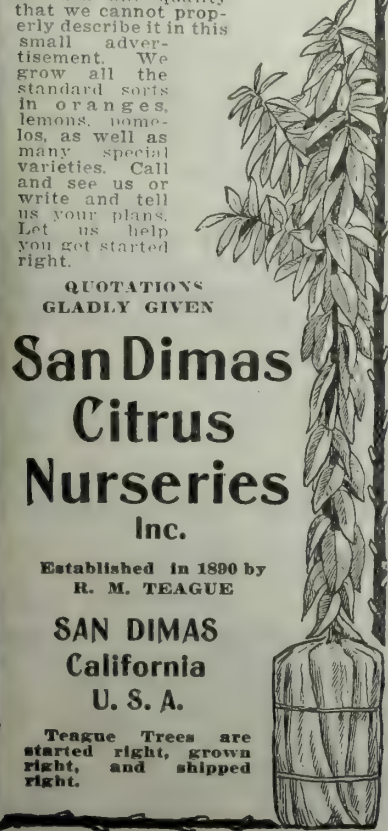
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Cost of Irrigating Plant.

No question is more commonly asked of an agricultural paper in California, or the West generally, than the cost of developing wells and providing irrigating equipment for a ranch. Although so frequently answered, it is still asked, and the following on the matter by Prof. G. E. P. Smith, irrigating engineer of the Arizona Agricultural Experiment Station, may contain points of value to many readers. It is based largely on Arizona conditions, but is about as true one place as another.

The cost of wells is exceedingly variable, for in some localities the good water-bearing material lies at shallow depths; at other times, it is found very deep. Sometimes the good gravels are in streaks or lenses, representing old waterways; sometimes the material is like a sheet, so that whenever one puts down a well he is quite sure to get a good water supply. In some instances excellent wells have been developed at a cost of not over \$200, while at other places \$2000 has been spent on a well without obtaining a good water supply.

I always recommend, for localities where the good gravels are shallow, that the well curb be built of reinforced concrete and sunk as an open caisson, while if the water gravels are very deep the well should be drilled. The cost of pumps and piping may be estimated on a basis of \$3 per acre (alfalfa) irrigated. Cheaper pumps can be purchased, but it is false economy to buy them. It is of greater importance to have a well-built pump than to have a fine engine to drive the pump. I should recommend the California pump manufacturers, since they have had great experience along pump irrigation lines.

Engines cannot be estimated on an acreage basis, but depend on the pumping lift also. Gasoline engines are not being purchased any more for pump irrigation in Arizona, for the new types of oil-burning engines which utilize low-gravity residual distillates are coming rapidly into use. I think these same engines will burn the Oklahoma crude oil just as it comes out of the ground, but they will not burn the crude California oil.

A conservative basis for estimating the cost of engines is 17c per acre irrigated for each foot that the water is to be lifted. Thus for a 100-acre tract where the lift is 50 feet, the cost of engine will be \$850.

In many instances where the farmers have not been well supplied with cash, but have used good judgment with regard to their wells and pumping plants, they have succeeded in making a very small capital go a long way. In general, however, it is desirable to develop an ample water supply, to install good machinery, and to build a good engine-house over it. In some parts of Arizona, ranchers have recently put in high-grade pumping plants at a cost of over \$5000 each. The Santan wells, on the Gila River Indian Reservation cost \$4000 apiece for the wells alone, but each well yields a water supply sufficient for a thousand acres of land.

The cost of pumping is even harder to estimate than the cost of the wells and installation, for the pumping cost depends not alone on the quantity of water and the lift, but also upon the character and efficiency of the machinery, and upon the fuel or other power that is used. I have figured above on a fuel cost of 5c a gallon. However, I feel free to assert that with a good yielding well and a good pumping plant, one can afford to pump water for alfalfa where the lift is 75 feet, and to even greater heights for vegetables, orchards, and other high-priced crops.

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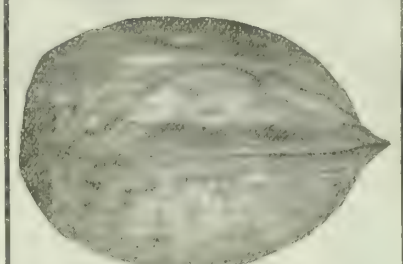
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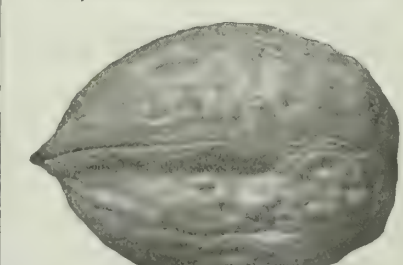
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The Use of Lime and Gypsum on California Soils.

[By Dr. CHAS. B. LIPMAN in Circular 111 of the University Experiment Station.]

Much confusion exists in the popular mind with reference to the actual nature of lime and its use. The following brief statements are intended to clear up difficulties which exist and to reply to frequently recurring questions on the important subjects of lime and its use and gypsum and its use.

THE NATURE AND FUNCTIONS OF LIME.—The term "lime," as we may employ it in the agricultural sense, includes the following materials: Burnt lime (oxide of calcium), hydrated or water-slaked lime (hydrate of calcium), ground limestone or air-slaked lime (carbonate of calcium). Even in the agricultural sense the term lime does not include gypsum. The latter is an entirely different substance from the three named above, as will be explained later. Speaking with the correctness of the chemist the term "lime" is applied only to burnt lime (quicklime) or calcium oxide. Just how the three materials discussed agriculturally under the name lime are to be employed and where one is to be preferred to the other, if at all, are questions which are answered below.

Before going into a detailed description of the mission or the function of lime in soils it is well to state clearly the relative values for practice of (1) the burnt, caustic, or quicklime; (2) the hydrated or water-slaked lime, and (3) the carbonate or air-slaked lime. These lime materials are largely valued for the amount of calcium oxide which they contain. Quicklime is nearly all calcium oxide. Hydrated lime or water-slaked lime contains less calcium oxide but may be looked upon in practice as nearly equivalent ton for ton to the quicklime. Air-slaked lime (like the ground limestone) or carbonate of lime contains only a little more than half the amount of calcium oxide that the quicklime does and therefore two tons

of it should be employed if it is used in place of the caustic form. The relative money values can be determined at any time from the foregoing explanation of relationship between the different lime materials. It must also be remembered in that connection, however, that the cost of handling larger quantities and additional freight rates involved must always be taken into consideration in calculating the actual and relative cost of the different materials. The following is a consideration of the function of lime materials in soils:

1. Lime materials have the power of shrinking clay and making it more pervious to water and air, by making a large number of crumbs from large sticky masses. Therefore, lime makes clays and clay adobe soils looser, prevents their packing, baking and cracking, makes plowing and cultivating easier, and, in general, makes the soil, physically, a healthier medium for plant growth.

2. Lime materials (as above described) serve as a source of the element calcium to plants. Calcium is one of the ten essential chemical elements in plant growth.

3. Lime materials make "sour" soils "sweet." Speaking correctly, they change an acid soil condition to a slightly alkaline one. Acidity of soils is very detrimental to the growth of many agricultural crops. A slightly alkaline condition is ideal for them.

4. Lime materials are necessary for useful and beneficial bacteria and other microorganisms of the soil. It furnishes these the element calcium, which is as essential to them as to the higher plants. It promotes a slightly alkaline condition which is ideal for their development. By its physical effects lime produces good air and moisture conditions for bacteria as above described.

5. Lime materials promote the normal decay of soil organic matter through their effects on the agencies of decay above described. The normal decay of organic matter in soil prevents accumulation of poisonous materials in soils which are detrimental to plant growth.

6. Lime will not neutralize sodium carbonate or black alkali.

THE NATURE AND FUNCTION OF GYPSUM.—Gypsum is the sulfate of calcium and therefore is not the same as "lime" nor the same as any of the three forms of the latter above described. The only thing which gypsum has in common with the three lime materials named, from the point of view of chemical composition, is that it, like the others, contains the element calcium. Let us study its functions in soils.

1. Gypsum exerts a similar effect to that of lime on the clay and adobe soils (see above).

2. Gypsum, like lime, serves as a source of the element calcium (see above).

3. Gypsum (like lime, stimulates the beneficial soil organisms on the roots of leguminous plants like the peas, beans, vetches, alfalfas and clovers.

4. Gypsum does not make "sour" soil "sweet." It will not change an acid into a slightly alkaline soil as do the lime materials. Gypsum is a neutral salt (possesses no alkalinity), and therefore will not be of assis-

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tance, or act as a corrective to a "sour" or acid soil.

5. Gypsum does not share with lime, to any appreciable extent, the good effects of the latter on soil organic matter (see above).

6. Gypsum will neutralize sodium carbonate or "black alkali."

LIME VERSUS GYPSUM.—The question comes to us so frequently as to whether "lime or gypsum" will correct a certain difficulty in soils. This confusion of two distinct types of substances has done much harm, and the reader is asked to read carefully the statements made above with respect to each in order that errors may be obviated. As above noted there are at least two very important functions which lime performs in the soil which gypsum can not perform. If soils need correction for acidity, or it is desired to promote normal decay of organic matter only, the lime materials will do and not the gypsum. Too much emphasis can not be placed on this distinction. In fact, to be on the safe side the use of lime is advised even in cases in which people with exact information might, perhaps, give the preference to gypsum. The distinct and limited uses for gypsum are below described, however, to serve as a guide.

LIME ON HEAVY SOILS.—No determination needs to be made to inform the owner of heavy land if lime is necessary to improve its texture as above described. The decision both as to the amount to apply and as to the feasibility of applying it must be made on the basis of the cost of lime and the degree of "running together" or baking and cracking, which is characteristic of the soil. From one to two tons of the burnt lime or of the hydrated lime, or from two to four tons of the ground limestone, may be safely applied to improve the working qualities of heavy soils. Application may be made by means of one of the several types of lime spreading ma-

chines or the lime may be deposited in piles and spread with a shovel. It should be well plowed in and covered up at a time when there is sufficient moisture in the soil for the lime to act well.

The burnt lime or the hydrated lime is to be preferred to the carbonate of lime for making heavy soils lighter if the cost will allow. The first two forms act more vigorously and more quickly. Applications of lime are best made prior to fall or winter plowing or several months prior to planting. This must particularly be borne in mind if either burnt lime or hydrated lime are employed.

LIME ON "SOUR" OR ACID SOILS.—If "sour" soils are also heavy clays or clay adobes, the recommendations for the use of lime above made for heavy soils are to be followed. If sour soils are loams, silts or sands, the ground limestone is to be preferred to the other forms of lime where it is obtainable.

To test your soil for sourness or acidity proceed as follows: Mix some of the surface soil to be tested and moisten thoroughly. Mold it into a ball of wet earth about three or four inches in diameter. Break the ball in two and on one of the broken surfaces place two strips of red litmus paper previously moistened with clean boiled water. (Litmus paper, both red and blue, may be obtained in the drug stores.) Set the broken surfaces of earth together again and press tightly. Perform the same test with another ball of earth, but use blue instead of red litmus paper. Allow the balls of earth to lie undisturbed for half an hour; then open, and if the red litmus paper has turned blue no lime is needed. If it remains red, and the blue litmus paper turns red, lime is needed and should be applied as above directed. If neither the red nor the blue litmus paper should change color during half an hour or more, then the reaction of the soil is neutral and small applications of ground limestone, not to exceed one ton per acre, will be sufficient.

WHEN AND HOW GYPSUM MAY BE USED.—Gypsum may be used to good advantage on alfalfa fields to stimulate the growth of the plants. This is especially to be remembered in connection with alfalfa fields of several years standing in which bald spots or bare patches are found. An application of gypsum in such cases, not to exceed 300 or 400 pounds to the acre, along with fall disking will give striking stimulation to the plants and rejuvenate the field. The reason for this is that gypsum is a stimulant to the alfalfa plant itself and to the nitrogen gathering bacteria which grow in the nodules on its roots.

If lime is very expensive, as it may be in some districts of this State, gypsum, if much cheaper, may also be used as indicated above, to lighten heavy soils. Applications varying from one-half ton to one ton per acre may be used in such cases.

Another use for gypsum, which is more limited, consists in applying it to "black alkali" land to neutralize or make harmless the black alkali. In this respect gypsum can not be replaced by lime. The amounts to be used in such cases will depend on the amount of black alkali present in the soil. This must be determined for those interested by the Experiment Station, which should be communicated with under such circumstances.

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Grape Juice Instead of Wine.

To the Editor: I have something on my mind and have got to give it an outlet.

It seems to me the grape growers, who are making big plans for a campaign to keep this state from being voted dry are really wasting a lot of time and money. For even though they should win at the next election they will just be putting off the inevitable.

I don't see why they should not turn their attention to the manufacture of grape juice. For grape juice as a beverage offers a chance to build up a far greater demand for it than could ever be done with wine—because the former can be drunk by everyone, men, women, and children and no one contends that it is not beneficial—while the latter even if not harmful in moderate quantities always has the danger line to contend

with and once it is crossed, the transgressor usually makes others suffer with him.

There is variation enough in the different types and the quality is such of the grapes raised in California, that a superior grape juice could be made that would suit every taste.

I believe if the grape growers would let the prohibition movement take care of itself and begin by turning a winery in each district into a grape juice plant and inaugurate a campaign advertising it as a beverage, they could soon build up a demand for grape juice that would take care of the grape crop better than the wine industry can be expected to do it.

The Fair at San Francisco would be a great opportunity to put grape juice before the public.

There is no prejudice to break down in coaxing people to drink grape juice. —PARKER TALBOT, Clovis.

[The wineries are already making grape juice and one of the largest concerns is advertising it in every possible way. It is no such simple matter as you imagine to make a substitution of products as you propose. We do not care to carry a discussion of the prohibition question, but as you have started it give it one shot under our rule and we shall allow the wine interest also to make its declaration.]

Whereas, After years of costly experiment it has been proven that California, by reason of its soil and climatic conditions, is the only territory in North America where foreign varieties of wine grapes grow to perfection; and, whereas, through concentrated efforts of the viticulturists of the State of California, aided and encouraged by the State and Federal governments, the viticultural industry of this State has attained a pre-eminent position at home and abroad; and, whereas, a large body of our citizens have engaged in this industry with the belief that viticulture and vine culture would develop vast areas of land, which have heretofore been non-productive, enlarge the field of honest and healthful labor and aid in the commercial and industrial development of California; and, whereas, in this State there is devoted to the viticultural industry more than 320,000 acres of land (a large part of which is unsuited to agricultural purposes), representing an investment of more than one hundred and fifty millions of dollars, and directly employing more than 150,000 people, who have with the aid of instruction from skilled and experienced specialists in this field of endeavor, made it possible to place California in the front rank of wine and raisin producing states; and, whereas, there is to be submitted to the voters of California at the general election in November, 1914, an amendment to the Constitution of the State prohibiting the manufacture, sale, giving away or transportation within the State of wine and liquor; and, whereas, the adoption of this amendment will destroy not only the wine industry, but also the raisin and table grape industries, which find an outlet for their surplus production through the wineries, will throw out of employment the thousands of people employed in these industries, annihilate investments and make non-productive the thousands of acres of land now devoted to viticulture; therefore be it

Resolved by the California Grape Protective Association, That we are opposed to the adoption of the proposed prohibition amendment because it is unfair, contrary to public policy and inimical to the industrial, viticultural, agricultural and commercial de-

velopment and welfare of California.

[We do not desire discussion of this matter. It has other avenues of publicity and we have too many other things to give space to. Let each reader thresh this out for himself.—EDITOR.]

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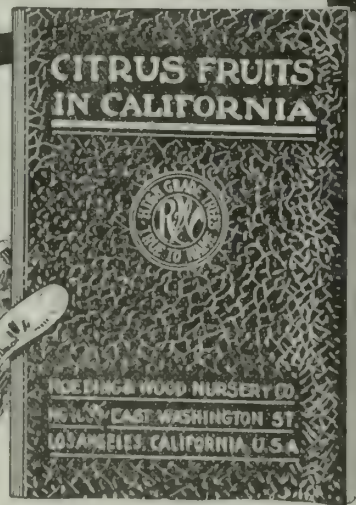
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EGYPTIAN AND DWARF MILO

To the Editor: What is considered a good yield of Egyptian corn? Will it make a crop on good soil without irrigation where there have been ten inches of rain, providing the land has been well plowed eight inches deep and harrowed; also if well cultivated? What is the relative value between it and dwarf milo maize as to price, feeding value, and forage.—SUBSCRIBER, Califa.

Sorghum will usually yield in grain a little more than Indian corn under favorable conditions and a great deal more under hard conditions. With fairly good conditions and a good stand you might get 50 bushels per acre. Sorghum will do more with 10 inches of rain than any grain we know of, which has to make its growth in the summer. Of course barley or rye, growing while the rain is falling, will get a higher duty from that much water. You cannot sow sorghum for a couple of months because it will not stand the frost. Whether there will be enough water left in the soil, at that date to make a grain crop, depends not alone upon the good culture you speak of but also upon whether the soil is retentive or leachy, etc. For this reason we cannot tell how much you will get. Sorghum yields all the way from a foot or two of stalk for forage, up to a full growth and a grain crop—according to the moisture it has to grow with. As for the goose-neck sorghum, which we presume is what you mean by Egyptian corn, and Dwarf Milo, we can only say that the latter is gaining popularity over the former; otherwise they are much alike.

GROWING STOCK BEETS.

To the Editor: How early and deep would you plant beets on fairly heavy, subirrigated soil—with no prospect of any surface water? And what variety are best to be fed to milk cows? When could it be expected they would be ready to feed if planted

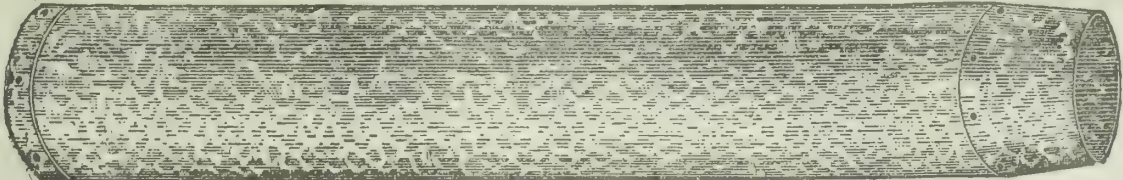
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LOS ANGELES



March 10? At harvest time, could I plow them out readily? With a view to having them earlier, would it be well to plant in November or so—or would they perish in the chill and wet of our winter?—L. B., Fresno.

[It will take from four to six months to get a good large stock beet—according to the amount of heat they have to grow with. On moist land you can plant all the year as the plant is little affected by frost. Take the Long Red Mangel or the Yellow Tankards; they get great size and make much of their growth above ground so you can easily harvest them for stock. Sugar or other small beets cost too much to handle for stock.—EDITOR.]

CREOSOTING POLES OR POSTS.

Considerable experimentation in the preservation of telephone and telegraph poles has been done by the Forest Service in California since 1906, and it has been found that cedar and yellow pine poles will keep best when given a tank treatment with creosote, while a combination tank creosote and zinc treatment is most efficient. A number of telephone and electric power companies have erected plants for treating poles according to the above methods.

COMPARISON OF SORGHUMS.

To the Editor: What are the comparative values of Egyptian corn, Kaffir corn and Milo Maize; first, as to the yield; second, as to food value, especially for poultry? I am told that Kaffir corn is the best for yield and Milo Maize poorest for feed.—J. C. G., Modesto.

[We know of no conclusive demonstration of the matter. Grown under

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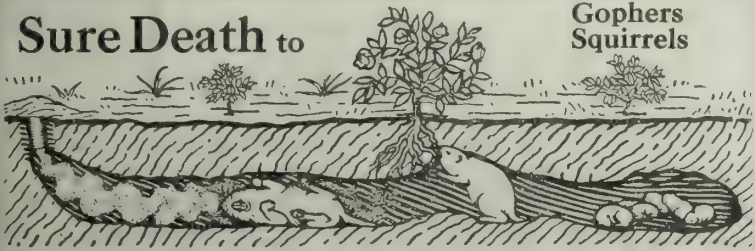
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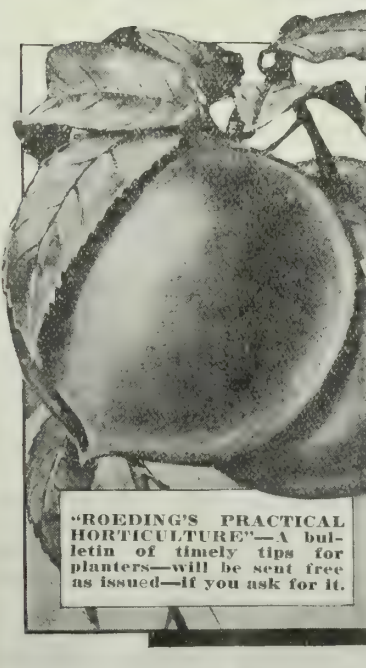
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varying conditions, there will be as great variation in yield and in food value between different growings of the same variety as between the varieties themselves. The sorghum to tie to is the one which, under your conditions, yields the greatest amount of good plump grain. That has to be determined by each grower from his own experience. He may start with the general assurance that all the varieties you name are good and he will find out later that for him one may be better than another.—EDITOR.]

Constructive Agriculture—No. 9.

The Personal Element in Success.

[Written for the Pacific Rural Press.]

A little over ten years ago Ed Powers of Manteca, San Joaquin county, left railroading to go back to the farm. He had \$150 capital. Now he is clear at least \$100,000 and is very little more than 30 years old. In fact, when he left railroad work he had not yet reached his majority. The account of how this was done is interesting both for the lessons of farm methods, of California opportunities and of personal self reliance and ability.

The real start of the story is at the time that he was 12 years old, when his father died and left a widow and three children, of which Ed was the oldest. After everything was settled up there was practically nothing left and mother and children made their way in the melon business, for which Lodi then was famous, working in the fields and raising melons on their own responsibility.

After several years of this Ed Powers was large enough and strong enough to strike out for himself and get into railroad work. He was not the required age, but got there anyway and worked and studied for all that he was worth for four years. At that time he had a good knowledge of nearly all kinds of railroad work, but had about reached the conclusion that

he could not get very high in it and that farming after all was best, so he resigned his job, went back to Lodi and with his mother and the family went into the melon business and other lines of farming. With no more capital than the \$150 he had saved he took a contract to plant a large acreage to vineyard and bring it to maturity for two-fifths of the property. He furthermore, as was necessary to make expenses, went into the melon business and contracted with two big melon houses to handle his melons. He raised a large number and contracted with other farmers for more and came through the season with flying colors. The \$150 capital was almost nothing but he had good financial backing from men who knew him and saw that he was going to make good. From that time to this, though he has been pretty deep in debt, he has always paid cash rental for every bit of land he used, and paid cash for every bit of land he bought. All the borrowing, by the way, was from banks.

The melon business became Powers' specialty and he soon was not only one of the largest growers, but contracted for large amounts also and spread out from Lodi to other towns in the northern San Joaquin valley where many melons were produced.

His first venture at Manteca came eight years ago. As most persons know, melons cannot be grown very often on the same ground and it is necessary to move around with them. Good melon land thus became rather scarce at Lodi and he looked around for another district. A friend advised him to visit where the town of Manteca now stands, a few miles east of Lathrop. Manteca then was Cowell's siding with a small one-room store for the convenience of travelers along the highway and the few grain farmers. The whole country was a sandy waste and the storekeeper was disgusted and told Powers and a companion, who were dressed for comfort and looked broke, that the land was played out till it wouldn't even raise rye any more. That is what the old line farming did to it. Powers decided that there was certainly no California promotion spirit there, but that the place looked fine for melons and rented a lot of the best land, buying 60 acres also.

The first year his freight bill on melons shipped out amounted to \$8000, the second year to \$12,000 and the third year to \$18,000. All this time he kept up his melon business in other places like Lodi, Turlock and other towns, though Manteca became his headquarters.

VARIOUS ACTIVITIES.—Here is where his railroading came in. There was no agent and for the sake of smoothing out his own business he became agent (without any station), attending to whatever other business there was also. There was no Wells Fargo office and plenty express work, so he became express agent also and Western Union agent and operator. By being express agent himself he saved quite a bit on commission. Furthermore the melon business requires a lot of telegraphing and telephoning and there was only one telephone in the vicinity so to obtain facilities he be-

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California and Battery Sts.,
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Hemingway & Company, Inc.,
17 Battery Place, New York.



Spring Wheat

SPRING wheat and barley must both grow rapidly and mature early. To do well they must be grown on land with plenty of readily available plant food. Much land is deficient in available

POTASH

See that your fertilizer for spring wheat or barley contains at least 6%—10% is much better—of available Potash.

Potash Pays—for it makes grain, stiffens straw and prepares the ground for clover.

Ask your dealer to carry Potash Salts so you can strengthen weak goods or, better yet, mix your own.

If he hesitates, write to us for prices, direct, on any amount from a 200-lb. bag up. Write for book of formulas and directions.

GERMAN KALI WORKS, Inc.

42 Broadway, New York

Chicago, McCormick Block; Atlanta, Empire Building
New Orleans, Whitney Central Bank Building
Savannah, Bank & Trust Building
San Francisco, 25 California Street



Barley

LIME NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of Lime for the Soil.
"ACME" LUMP LIME has no equal for spraying and building purposes.
Send for Free Booklet and Prices.

PACIFIC LIME AND PLASTER CO.,

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PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press



French Prune Trees and Blenheim Apricots

Guaranteed Pedigreed Stock

Prunes on Myrobolan, Almond, Peach or Apricot Root

Grafted Walnuts, Almonds Assorted Fruits and Splendid Ornamental Stock

Leonard-Coates Nursery Co., Inc.

Established 1878 Incorporated 1905

Morgan Hill, Cal.

PERFORATED TREE PROTECTORS



The only perforated protectors made, practically a small lath house about each tree, allowing at all times the free circulation of air as well as mellowing the hot rays of the sun while at the same time giving perfect protection. No moldy or smutty bark when using Our Wraps.

WHEN DOES THE TREE NEED PROTECTION THE MOST? You know, while it is young and tender; then let Us supply You with Protectors; it's the best investment you can make after setting out Your trees; if Your dealer hasn't them send Your order to Us and We will fill it promptly.

Write for Sample and Prices.

The Expan Protector Co.

935 E. Central Ave., Redlands, Cal.

25 YEARS EXPERIENCE IS REPRESENTED IN A SELECT STOCK OF 50,000

CHOICE CLEAN CLASSY CITRUS TREES

All the leading varieties, buds taken from our own tested orchards. Send for Catalog and price list.

POLLARD BROS. South Pasadena, Cal.



Kills Prairie Dogs and Gophers of all kinds. Endorsed by State Experimental Stations. 1400 tablets prepaid for \$1.25. War-ranted. Ratcide Tablets, 25c. Ask druggist or send direct. Booklet Free. F. D. Chemical Co., Ft. Dodge, Ia.

came telephone agent and later bought the rights to put in a telephone system for the district.

Manteca is a prosperous little town now and growing rapidly, the headquarters of the South San Joaquin Irrigation District, and has a fine railroad station and Ed Powers naturally is not station agent, but he is Wells Fargo agent, owns and manages the Manteca telephone system and generally is in charge of most of the business of communication and transportation. He will write life and fire insurance and one month sold and put in \$28,000 worth of pumps and pumping machinery and equipment. All this is, of course, incidental to his big farming and shipping business.

He has a five and six-year old vineyard of wine grapes, containing 500 acres, and by the way, looks after the business of the California Wine Association for the district. He owns a fine dairy, headed by one of the best bred Holstein bulls ever raised by A. W. Morris & Sons, keeps a \$3000 Percheron stallion and has a payroll that averages \$100 a day for the year. Nearly every kind of labor is employed by him.

Although melons is the main crop raised, melons cannot be grown two years in succession on the same ground, no more than three years altogether on any given area on account of the melon blight, so the land otherwise has to be occupied and is planted to oats, corn and various field crops. Naturally the clean cultivation given to melons and the change of crops that it needed after long years of grain farming does it lots of good and land that was said to be too poor to grow rye in the old days has given three tons of oat hay after melons. Oats are the best grain to plant.

The melons are of various sorts, by the way, watermelons, canteloupes and casabas of all profitable varieties. Last year 196 cars were shipped, but this year is too dry and the amount will be less.

Of course, good farming is at the bottom of the success with melons and field crops. Lots of people say that manure will burn up that sandy soil, but Mr. Powers takes all he can get. He has worn out two manure spreaders and has just bought a third. Naturally, there is not enough for all the land he farms, but whenever there is a very light spot in his vineyard, for example, he sends the manure there. The application thus is adapted to conditions and is not made haphazard.

The dairy ranch is excellent and will be worked into a pure-bred establishment ultimately. About 33 cows were being milked a day when we saw them and this will probably be the average number. Four Hinman milking machines have been used for some time and give entire satisfaction. One man does all the milking, feeding, caring for the milk, cleaning the barn out and so on.

Out in the corrals the cows have alfalfa hay to eat. Inside the stable chopped alfalfa is stored. The hay is chopped and blown into the stable by the silage cutter. This storage space is 60 by 20 by 24 and holds 170 tons, far more than it would hold of hay, or is needed for that number of cows, and the feeding value is greatly improved by the cutting also. There is, by the way, a string of cows on each side of the barn with the storage space for alfalfa, boxed in, between.

The cows are also fed corn silage.

Off from the west end of the barn there is a large silo. It was started of concrete and is of concrete about six feet below ground level and four feet or so above, but when this much was completed the plans were changed and the remainder is of resaw type, that is, studding with two layers of resaw and one of building paper between. It makes an excellent combination. The cows are always given a small amount of milled feed to keep them happy and contented, whether silage is available or not.

One of the main reasons for speaking of the dairy is to be able to describe the irrigation plant. There are two wells not far from a reservoir a few feet west of the silo and at about the highest part of the ranch. One of these is pumping all the time that irrigation is needed and fills the reservoir, which Mr. Powers states holds 1,000,000 gallons, during the night. It is then emptied and provides a big head for the irrigation of alfalfa. The other pump is then put on too and the filling is done more quickly. Under the method of operation the reservoir is filled and emptied three times every 24 hours. The reservoir is lined with road oil and gives entire satisfaction. The banks were sprayed with oil and covered with sand, let to harden and sprayed and covered again.

Mr. Powers is yet a young man, very little over 30. His success has been due to accurate observation and a good judgment, combined with the faculty of doing things that he saw could be done, that is, he knew how to take advantage of opportunities. His profits for the ten years and a little over have been approximately \$10,000 a year, including increase of land values, and this with a capital to start on of \$150. The \$150 alone would not go far, but financial backing came of its own accord when it was seen that he knew his business and would attend to it properly.

DEFEND PARCEL POST.

To the Editor: Unless every citizen moves at once, the parcel post may be ruined. A "joker" has been inserted in the Postoffice Appropriation bill, by the Committee on Postoffices and Postroads of the Senate. It is now pending before the Senate; and if adopted, THERE CAN BE NO IMPROVEMENTS IN THE EXISTING WEIGHT LIMITS, RATES OF POSTAGE, CLASSIFICATIONS OR ZONES OF FOURTH-CLASS MATTER UNLESS AUTHORIZED BY LAW, SPECIFICALLY.

If we are not to lose the fruits of forty years work, and see the people's express company destroyed to profit private monopoly, IT IS TIME TO SPEAK OUT. Let every farmer and every consumer TELEGRAPH AND WRITE his Senators and Representative that he will not stand for any tinkering with the Parcel Post Law. The Postmaster General is doing his duty. He has a right to be given a chance.

DAVID J. LEWIS, M. C.

Washington, D. C., Feb. 20.



WHITTIER COBURN CO. S.F. SOLE MFRS.

"A Stitch in Time Saves Nine"

An Old and True Saying

Here is a good illustration to prove it: A farmer found his soil was producing less each year. He worked as hard, plowed, harrowed, cultivated, irrigated, all at the proper time; tended as carefully as ever, but the crop was less.

He then realized that the soil was wearing out; that labor and water alone wouldn't bring as good crops as before. He feared that it was wasting, that it was exhausted, that it was no longer fertile.

He didn't whine about the matter, but cast about to seek a remedy, the same as he would if a horse were taken sick and was no longer able to work.

The farmer learned that soil needs refreshing; like his team which must be replaced by younger horses when the older ones give out; that the soil is composed of two things: organic matter, that is, organisms containing life, and inorganic matter.

He found out that to make crops grow, the organic matter in the soil must be kept fully alive, else the result would be a failure, or partly so.

He also found out that it would cost far less to keep those soil organisms alive than it would to try to resurrect them after they were dead.

If you will write to us for the booklet "Feed the Soil that Feeds You" it will be promptly mailed, free. It explains that fertilizing is an investment, not an expense.

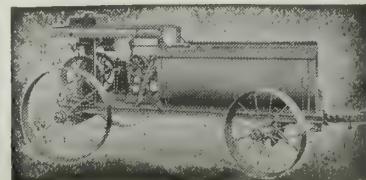
Western Meat Co.

704 Townsend Street

San Francisco

California

HARDIE SPRAYERS



Get a Hardie and be satisfied—the best sprayer made.

Complete line of hand and power sprayers and accessories.

POINDEXTER & SNITZER,

State Agent,

320 Market St., San Francisco.

AGRICULTURAL REVIEW.

General Agriculture.

A recent order releasing 17,000 square miles from quarantine against the cattle ticks, which spread Texas fever, brings the total area cleaned of these pests since the work commenced in 1906, to 215,908 square miles. This seems to be proof that the ticks can be eradicated by proper methods.

Hog cholera in every State of the Union has caused a loss of \$100,000,000 worth of what should have been meat food last year, according to State Veterinarian Keene. California's loss was \$2,000,000. Mr. Keene hopes to wipe out the cholera by forming county swine growers' associations which will act as nearly at once as possible throughout the State in immunizing all hogs with anti-cholera serum.

Sections of Fresno county have lost hogs and cattle by rabies caused by a mad bulldog.

The Northern California Live Stock Association was organized February 25 with over 100 cattlemen of Shasta, Trinity, and Siskiyou counties and representatives of the railroads and forest ranges.

Gilroy has a new concrete-floored abattoir, and stockyards are soon to be built.

Nevada has over \$2,000,000 worth of sheep, of which two-thirds are in Elko, Humboldt, and Washoe counties, according to the report recently issued by the Nevada Sheep Commission. Four per cent were infected with scab when inspected in 1913.

Three barrels of condensed milk was recently seized in Ohio for alleged adulteration by skimming off part of the fat.

The Elgin Board of Trade, charged with trying to monopolize control of butter prices, seem anxious to compromise without prosecution.

A movement is on for state organization of dairymen to encourage better care of cream in order to produce a quality of butter which can compete with the imported New Zealand product.

The Los Ganado Dairy is consolidated with the Chowchilla Improved Farms Co. They have planted 1000 acres to alfalfa, installed four pumping plants, and hope soon to have 500 cows in their dairy.

Yolo county supervisors recently appointed official squirrel poisoners for all parts of the county.

Ranchers of San Benito county are using carbon bisulphide in an organized effort to exterminate squirrels.

Tulare county is booming the automobile as a squirrel killer. A rubber hose conveys the exhaust to the hole and poisons the squirrel by means of its monoxide.

San Joaquin county ranchers have petitioned the U. S. Inspector of Public Health and Safety for aid in exterminating squirrels, especially along the railroads.

The Central States are afflicted with several serious potato diseases not yet common in California. A United States News Bulletin says in part: "The same system of seed selection and crop rotation that will free the potato fields of wilt, leaf-roll, and curly-dwarf will not only bring under control blackleg and some other diseases, but will insure the maintenance of the strains cultivated, in their most vigorous condition, and free from objectionable mixtures with other varieties."

Cutworms are damaging apricot blossoms in Kings county, working nights. County Horticultural Commissioner B. V. Sharp says that poison bran will get them before they climb the trees. It is made and used as follows: 40 lbs. bran, 10 lbs. mid-dlings, 5 lbs. arsenic, 2 gals. cheap syrup. Moisten with cheap glycerine so it will hold together, and put a few teaspoonfuls in heaps about six inches from the base of the trees. Keep chickens and stock away.

"Practically no tree diseases in San Joaquin county," is the report of Horticultural Commissioner Wm. Garden.

Great reduction of dodder in alfalfa seed is reported for the Northwestern States by the Oregon Agricultural College. Only one-fourth as many dodder infested samples are now found as three years ago.

Sutter county fruit-growers met on March 2nd to discuss the red spider.

Santa Clara and Napa counties are preparing to fight pear thrips. Government experts are at both places to advise fruit-growers as to control. Distillate oil emulsions, with tobacco extract added, should be sprayed at once.

A search of the Old World for parasites to prey on the fruit pests is being made by the California Horticultural Commission.

Tons of ladybirds are being collected for the State Insectary at Sacramento to use in fighting fruit and vegetable pests.

Alaska is to have a Government constructed and operated railroad to cost \$35,000,000 and to be 1000 miles long. The Department of Agriculture estimates 100,000 square miles suited by topography, soil, and climate to agriculture and stock raising. Most of this is drained by the Yukon.

A movement is on to exterminate English sparrows in San Bernardino, Riverside, and Imperial counties. On the other hand, a boy was recently arrested at Vallejo for shooting a meadowlark.

Ukiah boys are warned that State and United States laws prohibit the TWO-AG REV—...—g killing of all birds except bluejays, hawks and sparrows.

Today is Bird and Arbor Day in

California. School children especially are being interested in its appropriate observance.

Bridge grafting rabbit-girdled trees is advocated by H. J. Baade, of Napa. Scions of the same tree, cut wedge shape at both ends, are inserted across the gnawed strip, so that their cambium layers connect with those of the tree. This can be worked even on large trees.

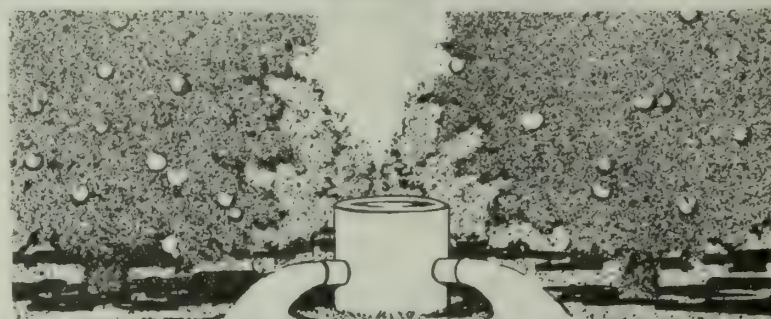
Tehama county squab raisers are in great demand since the losses by recent floods in the south. Riley Clark

shipped 20 dozen at \$4 per dozen in two weeks from a flock of 1500 birds.

Thousands of squabs at the pigeon farm in Los Angeles were drowned when the pigeon pens were washed away recently.

A hill of beeswax containing many tons is reported to have been found near Fallon, Nevada.

The State Board of Prison Directors has fixed a charge of 8½ cents each on the bags turned out by the San Quentin penitentiary jute mill in 1914. The entire output will be between



IRRIGATION **KT** SYSTEMS

Save Every Drop of Water

Use the modern "KT" System of Irrigation and save Water, Money, Time, Land and Labor. With the "KT" System, the conduits are underground and are always clean and free, always delivering their maximum flow of water. Discard the costly and wasteful earth ditches, the temporary wooden flumes, and the perishable and obstructive concrete flumes. Install the

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THE UP-TO-DATE IRRIGATION SYSTEM

—AND YOUR IRRIGATION TROUBLES WILL BE OVERCOME FOREVER. It's the system that is rapidly doing away with the old, cumbersome, wasteful methods. It conserves every drop of water and places it where it will do the most good. The "KT" System is the result of years of actual irrigation experience. It has solved the irrigation problems of hundreds of satisfied users. No matter what system you are using, or contemplate installing, it will pay you to investigate the merits of the "KT."

Write today for the Eighth Edition of our Brown Book on Irrigation. It costs you nothing.

KELLAR-THOMASON CO.

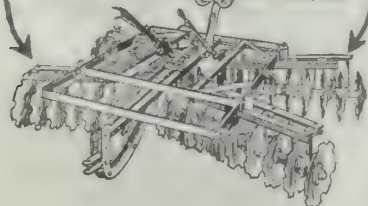
1234 E. 28th St., Los Angeles, Cal.

IMPERIAL ENGINE DISC HARROW

An up-to-the-minute, practical harrow, that will appeal to the up-to-the-minute farmer. Very easily managed, strong, rugged and has sufficient capacity to follow any tractor. The frame is made of angle steel doubly re-inforced at corners. Bearings are dust proof, being enclosed in dust proof bearing boxes.

Our catalogue will explain why it will be to your advantage to have one of these harrows. Write us to-day.

H. C. SHAW COMPANY
Wholesale Distributors
56 N. California St., Stockton, Cal.



We are the largest growers of grafted walnuts in California and have the most complete assortment of varieties.

Our method of grafting insures almost a perfect stand.

Can supply Eureka, Concord, Mayette, Parisienne, Franquette, etc.

ASK FOR QUOTATIONS

We grow everything that grows—fruit and ornamental. Illustrated catalog pricing 2000 varieties sent free on request.

FANCHER CREEK NURSERIES, Inc., Box 18, Fresno, Cal.
Geo. C. Roeding, Pres. and Mgr. Paid-up Capital, \$200,000.

4,500,000 and 5,000,000 bags. The maximum available to any one buyer is fixed at 10,000 bags up to May 15, when an inventory will be taken of the quantity on hand and a new maximum established.

Lindsay tested a stooling, dry land corn combining the qualities of the sorghums and Egyptian corn last year. It is called "feterita" and makes good fodder.

Stands Government Tests

The Agricultural Department of the United States Government is continually making tests of the various sprays and other chemicals manufactured by various concerns to see if they come up to the standard in purity and potency.

Specific information is at hand to show that the General Chemical Company of California has never had any of its products fail to come up to the test of the Agricultural Department's standard.

This is a valuable point to you in the purchase of spraying material.

You want the spraying materials which will do the work that it is intended they should. It's too important to you to take any chances.

Arsenate-of-Lead paste and powder is one of the reliable spraying materials made by this company.

This company manufactures orchard and spraying materials to combat all kinds of insect troubles and fungus diseases.

Send for Special Information Blank R. P.

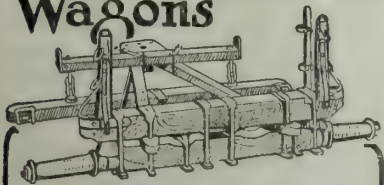
Mr. Foster will analyze your troubles and tell you what you should do. This information will not cost you one penny.

If you can't get our spraying materials from your dealer, notify us and we will see that you get them.

General Chemical Co. of California

Royal Insurance Building
SAN FRANCISCO

Rushford California Wagons



Good Timber and "Bone Dry"

The Rushford is the strongest and lightest running wagon in the world—it is the most satisfactory to the user—will stand the roughest usage. Note the position of the "outer bearing" block on both front and rear axles. "Outer bearing" axles increase the carrying capacity not less than 25%. It is absolutely impossible to break an axle with this outer bearing, nor is there any danger of the axles being sprung.

Send for Literature
The H. C. Shaw Company
Wholesale Distributors
56 N. California St., Stockton, Cal.

Many new applicants desire range for horses, cattle, and sheep in the Sierra national forests. Supervisor Redington thinks all ranges will be assigned by March 15th.

From the national forests 650,000,000 feet are cut annually, netting the Government about \$1,400,000. The annual conference of district foresters was held last week in Salt Lake City, improvements in methods of sale being one of the chief topics along with reforestation of denuded lands.

Of the three Pacific Coast States, Oregon and Washington far outstrip California in the work done by private owners for forest protection.

Lodgepole pine seed sown broadcast on the snow in southern Idaho last spring germinated when the snow melted, and as many as 60 little trees were counted to the square foot. The summer was so dry, however, that most of the plants died, except where sheltered by brush or logs.

The Spreckels Sugar Co., in Monterey county, has contracted for 2000 acres of Alvarado beets, where the factory is closed, so that they now have 22,000 acres. The price was \$5.50 per ton on board cars at Alvarado.

William Lorang, of Imperial county, has 64 acres of eucalyptus, mostly red gum, which he says resists rot better than gray gum. One four-year-old tree is 48 inches in circumference.

Vegetable Notes.

San Joaquin county potato inspection to prevent spread of eel worm and tuber moth is now in force. None but clean potatoes will be allowed to be planted.

The Celery Growers' Association of Orange county reports that but very small acreage of celery was lost by the recent rains. Early varieties were mostly shipped; the late variety is only now ready for market.

Forty acres of peanuts are to be raised in one plat in Kings county this year.

W. C. Hale, of Solano county, is to grow 100 acres of tomatoes for the cannery at Suisun. Cannery people estimate the crop per acre at twenty tons, worth \$8 per ton. Vegetable canning to keep the factory busy outside the fruit canning season is likely to be profitable.

D. Stanley, of Tulare county, had several vines bearing ripe tomatoes on Washington's birthday. Another man has had ripe tomatoes all winter.

Ripe strawberries were picked by the basketful in February in Placer county.

The Pea Packing Co. of Stanislaus county has 550 acres planted to peas and will have 100 more. They are contracting tomatoes at \$8 per ton.

Eugene Garin is shipping peas from Alameda county.

Last week several crates of asparagus were shipped to Los Angeles from Sacramento county.

Attorney-General McReynolds handed down an opinion last week that Cuban sugar is entitled to a 20% reduction of tariff while the present treaty is in force. Louisiana growers have tried to keep the tariff up to the duty required of all other sugar imports.

Beet sugar men are working for the election of Congressmen who will favor repeal of the free sugar clause in the new tariff bill. California and Colorado will suffer particularly.

(Continued on Page 311.)

CLASSIFIED ADVERTISEMENTS

Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

PAINT AND ROOFING—Standard brands of paint and roofing at wholesale. THE OLD HICKORY SUPPLY CO., Dept. 3, San Francisco, Los Angeles.

To reduce the high cost of living send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

AIR SLACK LIME—H. B. Matthews, 733 Merchants Exchange Bldg., San Francisco

WANTED.

WANTED—Assistant superintendent for large ranch. Only man of wide California farming experience, familiar with handling grain and alfalfa on thousands of acres need apply. Apply by letter only, giving detailed experience, references, etc., to 1314 Merchants Exchange, San Francisco.

WANTED—A good, steady, gentlemanly salesman to handle a Ward's wagon in San Francisco county. No experience needed. For full particulars write promptly to Dr. Ward's Medical Co., Winona, Minn.

WANTED—Position as ranch foreman on grain, alfalfa and stock ranch. Familiar with all details and able to accomplish the best results. References. Box 62, Pacific Rural Press.

WANTED—A position as manager or superintendent for large orchard. Many years experience growing, shipping, and drying. Best of references. Address Box 14, Pacific Rural Press.

WANTED—Dried fruits, nuts, honey beeswax, beans, etc. J. E. Lawrence 326 Clay St., San Francisco.

FOR SALE OR EXCHANGE.

30 ACRE DAIRY RANCH—Fine alfalfa; best of soil; one acre family orchard; fine buildings; two houses, four and seven rooms; everything new; cow houses, machinery. First cutting promises fifty tons. Four or five more to follow for the season. Ideal location. One mile from Atchison, Topeka & Santa Fe main line station, grammar and high schools, bank, milk condensery, four churches. Price \$15,000, \$5,000 cash. Address owner, A. H. GABEREL, Hughson, Cal.

FOR SALE—One of the finest home places in California; 27 acres, 10 acres in alfalfa, balance in young orchard just in bearing. Fine buildings and fences. Everything new. Stock, tools and machinery all go at \$600 per acre and worth \$1000, 1½ miles from P. O. For particulars see Thomas Auld at Henry Corral, Chico, Cal.

BUSINESS OPPORTUNITY—Retail milk business in first-class condition, supplying bottle trade; approved equipment and good foundation for enlarging business if handled properly. Address Box 88, Pacific Rural Press.

A BARGAIN—35 acres, good house and barn, 25 acres alfalfa; Thompson's grapes, peaches. Water 75c per acre. \$8500. J. T. SONNE, R. 1, Box 70, Fowler, Fresno Co., Cal.

BRAE BROOK COLLIE KENNELS, Route 3, Box 69, Santa Rosa, Cal.—Puppies for sale by Lord Ormonde ex Brae Brook Babbie (Tri-colors), \$15 to \$25.

WIRE FENCE—Woven wire fence and barbed wire. THE OLD HICKORY SUPPLY CO., Dept. 3, San Francisco, Los Angeles.

FOR SALE—30 acres, house, barn, water, fuel; \$1650, \$1500 cash; balance assume. W. HATHERALL, Redding, Cal.

LAND FOR SALE.

VICTORIA, AUSTRALIA, WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California; no extreme heat or cold. Small deposit and 31½ years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairying, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Box W, 687 Market St., San Francisco.

FOR SALE—No. 1 alfalfa hay in carload lots, any quantity up to 400 tons. Prices right. Address correspondence Lodi, Box 61, R. F. D. No. 3.

Send for illustrated circular of best, most artistic orchard home in Santa Clara Valley; 20 acres. JOHN F. BYXBEE, Palo Alto, Cal.

TREES AND NURSERY STOCK.

SURPLUS UMBRELLA, APPLE, CAL. BLACK WALNUT TREES.

4000 TEXAS UMBRELLAS, all grades to twelve feet, straight stemmed and branched.

8000 YEARLING APPLES, 4 to 6 and 6 to 8 feet. Absolutely free from aphid and gill edge in every particular. Spitzenberg, N. Y. Pippin, Yel. Bellflower, Baldwin, Winesap, Rome Beauty, Wagener, Ben Davis, Red Astrachan, White Astrachan, Gravenstein, Alexander.

10,000 CAL. BLACK WALNUT, one and two years. All stock has roots well branched. Prompt delivery and special attention to trade orders. Will exchange for small ornamentals suitable for lining out in nursery.

JOHN L. AMES, Live Oak, Cal.

FANCY CITRUS TREES, selected field stock, irrigated fortnightly, at least 15 hours per row, without exception, never frosted, buds as select as possible. Inspection and comparison of buds or stock in character or ancestry solicited.

COMMERCIAL CITRUS TREES, at bedrock prices, with attention to large orders.

SEED BED STOCK, FLORIDA SOUR and NATIVE SWEET from a bed covering an acre, cheerfully compared with the extra select anywhere, at very low prices. O. E. VAN SLYKE, 620 Foothill Boulevard, Azusa, Cal. Phone 476.

CITRUS TREES—Washington Navels ½ to ¾ in., 70c; Washington Navels, ¾ to 1½ in., 80c; Valencia, ¾ to 1½ in., 75c; Valencia, ¾ to 1½ in., 85c; Eureka Lemons, ¾ to 1½ in., 75c; Eureka Lemons, ¾ to 1½ in., 85c; Grape Fruit, ¾ to 1½ in., 80c; Grape Fruit, ¾ to 1½ in., 90c. Above prices are for Balled Trees f.o.b. Glendora; 5c less packed in moss. Order any kind of tree you like and I will furnish same. Florida Sour and native sweet seed-bed stock. One-third cash must accompany all orders. W. O. West, Glendora, Cal.

FOR SALE—Peach, apricot, plum, prune, fig, apple, pear and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants, elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRINK & KOHMAN Nurserymen, Box 1212, Fresno, Cal.

PEDIGREED NURSERY STOCK and Selected Stock. Thoroughbreds. Records from some of the best producing trees in Southern California. Seed Bed Stock. Florida Sour; tall and stocky. Satisfaction guaranteed. Prices Reasonable. F. H. Nubickel, Glendora, California. Phone 388.

WASHINGTON NAVELS, Valencia, Marsh Seedless Grape Fruit, 1½ to 2 ft. high. Thrifty, budded trees. Bare roots packed in moss, at 35c each on cars Redlands; or by express, 15c extra. Carroll B. Smith, Box 9, Redlands, Cal.

WALNUT TREES—Late blight resisting varieties grafted and budded on California black and hybrid roots—Eureka, Franquette, Mayette, Neff's Proflific, Concord and Placencia. Dr. W. W. Fitzgerald, Elks Bldg., Stockton, Cal.

BURBANK SPINELESS CACTUS—Forage and fruiting. Fifteen varieties. None of the out-of-date cheap kinds. Only those varieties advertised by Mr. Burbank in 1911-1912. J. T. GREEN, Box 63, Morganhill, Cal.

TREES—Special prices on grafted walnut trees. Oranges, lemons, apricots, pears, peaches—everything. Get my prices. A. R. Marshall's Nurseries Box 64, Santa Ana, Cal.

ROBINSON CITRUS NURSERIES, San Dimas, Cal., growers of standard orange and lemon trees. Also Burbank and Mediterranean spineless cactus plantations.

IMPROVED STRAWBERRIES and St. Regis Everbearing Red Raspberries. OLD HICKORY SUPPLY CO., Dept. 3, San Francisco, Los Angeles.

BERRY PLANTS AND RHUBARB—Everything in small fruits for garden and orchard. Send today for price list. Louis F. Scribner, Pasadena, Cal. R.F.D.

Are you in the market for Burbank Spineless Cactus? Forage or fruiting. Can supply in small or large quantities. Enquiries solicited. Box 803, Pacific Rural Press.

The Franada Citrus Nursery Co. of Ducor, Tulare County, Cal., will quote you Florida or Cuban sour orange seed prepaid any address, any amount.

HIMALAYA BERRY TIPS for sale—\$3 per hundred, \$20 per thousand f.o.b. Kenwood. Address M. S. BAKER, Kenwood, Cal.

BURBANK'S Giant Winter Crimson Rhubarb Plants for sale at a bargain. J. R. STARKEY, R. 4, Sebastopol, Cal.

If you are interested in olives or rhubarb, write for my booklet. Alta Vista Nursery, Highland, Cal.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

GIANT HIMALAYA BLACKBERRY plants, strong rooted tips, \$7 per hundred. GEO. P. CATER, Lincoln, Cal.

California Draft Horses for California.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

A carload of grade Belgian draft geldings weighing 1800 to 1900 pounds reached San Francisco, February 25, from the central west for use on one of the city dray lines. Nearly \$5000 of California money now rests in the

our California. Belgium, France, and Great Britain, though farther north, are warmed by the Gulf stream somewhat as we are by the Japanese current. Our hot weather and cold are tempered and made equable by the heat absorbing and radiating ability of the sea, so that sudden severe



Five Year Old Shire Stallion Branhope Peel, Weight 2000 Lbs.

prairie States that should have been spent here. And this shipment is only one of many hundreds. Nearly every perfection in a section whose climate, feeds, and soil are scarcely better adapted to draft horse perfection than

changes of temperature are rare. Our winters produce a rank growth of succulent pasturage so necessary for the best development of growing stock, which may be outdoors practically the year around if shelter from the winter



Typical Clydesdale Stallion Owned in California.

large user of draft horses goes east if he is particular what he is to get.

But the dray company did the right thing in buying where they could get what they needed. The farmers of California are doing the wrong thing in not producing enough sound horses for home use.

CALIFORNIA CONDITIONS IDEAL.—The draft horse breeds originated and developed to their present approach to

rains is provided. Our summers are hot in the big central valley, but they are not distressingly humid as in the central States.

In California, a draft colt is practically full height at two years of age—in the eastern States he increases in stature more than twice as long and then is no taller than his western rival.

Yet the East, with its handicap of

severe winters and hot humidity in summer, is raising work horses for us to buy, and practically all of our breeding stock is imported.

LACK OF INTEREST UNJUSTIFIED.—“Why is it so?” may be answered in several ways which may all be summed up in the lack of interest in improved horse breeding among California farmers.

This lack of interest is not justified in the face of the very probable future

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

POLAND-CHINA PIGS FOR SALE—From two to four months old, nice smooth heavy boned pigs, out of our prize winning stock, at from \$12.50 up; also will sell three or four of our three-year-old brood sows; these sows are the ones that have given us our reputation and are fine large sows; have always had large litters and raised them; one raised a spring litter of 10 and saved them all; we sold them before they were seven months old for \$345, and she should do as well for you. If interested, write W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. F. Dagg, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

DUROC-JERSEYS—Three 4-month-old boars. One-year-old boar and brood sows for sale. Elmer Wantz, Orland, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog all ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

DUROCS from first-prize winners State Fair, \$10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Heary, Farmington.

MULEFOOT HOGS—Best for Pacific Coast. Jno. Dunlap, Williamsport, Ohio.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

PRIZE POLAND-CHINA BOAR for sale—The pig that took first prize at Sacramento last year; a show hog; that means he is very nearly perfect; will weigh about 250 lbs. in just good growing condition; the best young hog in the State. We cannot use him or he would not be for sale. We paid \$250 last year for one not as good, and half that will buy this one. Money back if he does not suit. The first \$125 gets him. W. A. Young, Lodi, Cal.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS—Gay Lad 6th heads herd O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Ramboulls, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Ramboulls. Hanford, Cal.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Cremelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

FOR SALE—20 head registered Holsteins. One bull 2 years old, balance cows and heifers. Some A. R. O. cows. All in good construction. M. Holdridge, Wood Colony, Modesto, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

FOR SALE—Ten good dairy cows bred to registered Holstein bull. W. N. Totman, Emmatton, Sacramento Co., Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

HORSES AND MULES.

FOR SALE—\$1000.00—The imported Percheron stallion Castallane, owned by the Imported Draft Horse Association of Bethany, Cal. Castallane has stood for six years in this locality, and his colts are too numerous. He can be seen at the ranch of W. Peterson, 1½ miles south of Bethany. Pedigree can be seen at Secretary's office. For further information address C. Schlichtman, Bethany, Cal.

FOR SALE—Black Percheron registered 7-year-old stallion. Good foal getter. State license to serve. Will sell for want of use, at low figure. Sufficient time allowed purchaser for horse to pay for himself. F. B. Chandler Co., Vacaville, Cal.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

FOR SALE—Big-boned, 15-hand, registered jack. A good worker. W. F. Cummings, Healdsburg, Cal.

MISCELLANEOUS.

FOR SALE—950 A1 Arizona range cattle; cows, yearling heifers, and calves. I. T. Grounds, R. 1, Box 39, Kerman, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

of the horse demand. Let us refer to the figures of the U. S. census for California.

In 1910, there were 468,886 horses on 76,119 farms which were 86.3% of all the farms in the State. The other 13.7% had no horses. Of all horses on farms, 402,584 were over a year old, and their average value was \$108.72, considerably more than twice the average value of mature horses in 1900, though in the ten years, the number of horses on California farms had increased nearly 50,000, and the total number in California had increased more than 85,000. In 1900, the cattle of United States were valued at nearly twice the horses, while in 1910, horses had the lead of all classes of domestic animals.

In the opinion of those who are staking millions of dollars on their opinion, the value of horses will not decrease.

BOTH TRACTORS AND HORSES WILL STAY.—An apparent disturbing ele-

their cultivation, and some horses will probably be required on every farm for jobs a tractor could not do. Why let them eat hay while the tractor burns oil. Again, the tractor is not likely to be a good road machine, and there be many farmers who could not afford both tractor and auto. He has both in a pair of well bred drafters, as he can have the auto besides.

A California horse importer who makes frequent trips to England maintains that conditions for tractors in England are more favorable than here, the cost of maintaining them is less, horse feed is higher priced, yet heavy horses are harder to buy now than ever. A friend of his who farms 2000 acres in England remarked, "We must have horses—there are many jobs we can't do any other way, and since we must have them, we might as well use them for the rest of the work."

CITIES NEED HORSES.—In the cities, dray hauls are usually short, they must be made slowly on the crowded streets,



Salvador Forest King, Foaled April 30, 1912, at Salvador Stock Farm, Weight 1500 lbs.; First Prize Yearling California State Fair 1913.

ment is the tractor. There is no doubt that the tractor is here to stay, both in city draying and on the farm. But the tractor will not crowd out the horse for several reasons. First, cost, fuel and repairs, waste of rush time, depreciation, higher priced men required where wages already seem high to the farmer, and in ordinary human nature a hired man will not care so well for a machine as for a living horse—these are reasons why the horse will stay. The cost of operation per ton-mile in hauling or per acre in plowing is about the same, and depreciation of horses begins only late in life and is more than repaid by the offspring of the mares if intelligently bred—for their own good and that of the foal demands that they be worked nearly to the time of birth.

No one knows that the oil fields of the world are inexhaustible, yet oil seems to be the only economical fuel in California.

SMALLER FARMS NEED HORSES.—Sub-division of large farms goes on apace, and immigrants will soon be coming to hasten the process. Sidehill farms such as abound on the coast and Sierra foothills require horses for

many stops and starts are required. A large dray company of San Francisco which has tried trucks for the past year or two, has found the cost too great except for long hauls, and though they have 200 or 300 horses, they use only five trucks. They are shipping high-priced horses in from the East in spite of high express rates and sickness and injury incurred on the journey. Two trucks were used for a year by a Milwaukee firm and then turned back in favor of horses.

ARMIES NEED HORSES.—The armies of the world, even in this era of peace, are using large numbers of grade and ordinary heavy horses. Great Britain's requirements are 3000 annually, while in case of war there would be immediate need of 44,000 to fill up the home ranks and 86,000 more for the territorial forces besides 10% of that number per week to replace the casualties of campaigning. Our consul general at Berlin estimates that the German government will buy 10,000 horses this summer and fall. And even for our little U. S. army the supply is so precarious that the government is con-

(Continued on Page 2.)

BLACK HAWK STOCK RANCH



ANSWEK ARTHUR
Age 5 years. Weight 2150 lbs.

For Sale—SHIRE STALLIONS ranging from two years up. Also MARES in foal. Breeding and quality unsurpassed. Prices right and inspection invited. Correspondence given prompt attention.

Address: **HARRY CLARK, Burlingame, Cal., or Dr. J. B. DALZIEL, 530 Fulton St., San Francisco**

A. C. RUBY, Portland, Ore.

C. W. BOWERS, Davis

Ruby & Bowers

The Largest Horse Importers on the Pacific Coast

A Carload Just Received at Davis



We sell more imported horses than all other firms on the coast because we are direct importers and give a four-year guarantee which is good right at home. We have on hand at all times the largest and best lot of heavy draft stallions and mares, both American bred and imported, to be found any place in the West. If you are in the market for a high-class stallion or mare, don't fail to give us a call, as we can sell you more genuine horse for the money than any other importer in the business. Our stallions at from \$1000 up can't be beat anywhere.

Address **RUBY & BOWERS, Davis, California**

We have imported more horses than any other firm in the United States during the last year.

References: American Nat'l Bank, Pendleton, Ore., Merchants Nat'l Bank, Portland, Ore., Bank of Yolo, Davis, Cal.

Draft Horse Future Promising.

[Written for the PACIFIC RURAL PRESS
by HENRY WHATELEY.]

If we were influenced very much by what we read in the papers, we should cease to breed horses at once and prepare to do our work with motor trucks and tractors. But we must remember that the manufacturers of those machines are probably the most enterprising advertisers in the state, and it would seem that their enthusiasm sometimes induces them to make exaggerated claims for their wares. While the truck and tractors are being pushed onto the market by thoroughly organized selling agencies, the horse has to make his way unaided, and of late he has been very much handicapped by the high price of feed.

There is no organization of any kind to take care of his interests or to do a little boosting for him. In spite of this, the demand today for draft horses of the right type is excellent, as is shown by the fact that one of the largest users in the city is at present in the East buying horses, being unable to get what he needs in California. A recent sale by a Lassen county breeder of over 200 head of Shire-bred range-raised horses at \$210 per head also shows healthy demand.

I see little prospect of the supply of heavy drafters for city use exceeding the demand. With the country demand, the tractor cuts very little figure, for only on the large farms can it be used profitably. But California is destined to be a state of small farms, and as farming becomes more diversified, which it surely will, the tractor will be still less able to take the place of the horse.

With bumper crops this summer, there will certainly be a shortage of horses, and this will probably be ac-

centuated by the influx of new settlers when the canal is opened.

The raising of a few draft horses, if done with judgment, is quite profitable to the average farmer, but when a man or a company of men pay \$3000 or \$4000 for a stallion and use him on very inferior mares, they are not on the high road to success. In the first place, it is not necessary to pay such a price for a stallion to raise draft horses. A very good one should be bought for \$2000. Again, good draft horses cannot be raised from small inferior mares, however good may be the stallion. Good mares are just as essential to success as good stallions.

The value to his owner of a good stallion is in proportion to the quality of the mares he owns. For instance, in England, there are Shire stallions valued at \$10,000 to \$20,000. This value is put upon them on account of what they can get from first-class pure-bred mares, but if one of these horses was brought to California and bred on common mares he would only be worth \$2000 to \$3000. If you have a good stallion, you ought to have some good pure-bred mares to get the best from your horse.

THE ADAPTABLE MULE.

[Written for the PACIFIC RURAL PRESS.]

When I left Iowa to work in Dixie land, I noticed several things. One of them was the mule stock that is almost universally used on the farms of the hot southeastern states. The mule was usually followed by a negro, and both seemed equally immune to the down-bearing heat. I noticed too, that the negro usually had to step lively to keep up with the mule, such swift long strides and such big bony frames covered by tough ropy meat and sun-baked hide, I had never seen before, and I knew our Iowa horses couldn't keep up with those mules in that hot country for an hour.

Of course there are lazy mules, and vicious mules, but they are not the kind to breed. Since California also has some hot times, the places where they occur might well be supplied with mules like those I saw in the Southland.

Census figures show that in 1910, 12.5% of all California farms had a mule or more. The total number in the state over a year old was 61,997, whose average value was \$137.94. Since the horses over a year old were valued at \$108.72, it is easy to see that the owners of those mules had valuable property, and it is probable that the expense of raising them was less. Indeed, it is said that even a mule colt knows barbed wire when he sees it.

Though California has only 14.9% as many mules as horses, she was not so good a buyer of those back east as the foreign countries. In the year ending June 30, 1912 about the average 5000 mules were exported valued at nearly three-quarters of a million dollars. The average price of exported mules in the year ending June 30, 1899, at the beginning of the Boer war was \$76.52, in 1903 it was \$121.47 and in 1912 it was \$149.38. Canada is our best customer, showing wide adaptability of the animals.

Jacks are subject to the stallion law of California, the enrollment showing 77 pure-bred and less than a dozen

grade. A point that needs the attention of horse breeders aside from the adaptability of the mule is the fact that a jack owner may use his animal

in the same neighborhood all his life without any danger of inbreeding. This branch of the horse industry deserves more attention.

Valley View Jack Farm



Jack 24 months old, 15½ hands high

I Have the Largest Herd of

Pure Bred Mammoth Jacks

and Jennets on the Coast. Am raising only Large Boned Kind with Plenty of Substance

Prices reasonable, Terms liberal
All Stock Guaranteed

J. E. DICKENSON
FRESNO, CAL.

PERCHERONS AND BELGIANS

Imported and Home bred registered Percheron stallions and mares. Over 30 head of Percheron mares and half as many Percheron stallions from weanlings up. Also a few choice imported and home bred Belgian stallions.

If you have pure bred registered mares and breed to a registered stallion your colts are eligible for registration. This gives great addition to the value of your colts for sale for breeding purposes. You are also helping in the movement for improving draft horse breeding in California.

SAME LABOR AND FEED BILLS—MORE PROFITS—MORE PLEASURE.

LOS ALTOS STOCK FARM

Los Altos, Cal. On the electric line between San Jose and Palo Alto.
Five miles from Palo Alto.

SORE-SHOULDER INSURANCE



If you could get insurance against your horses becoming sore-shouldered when most needed, you would take it at any reasonable price. Why not take it FREE by using

W. DAVIS & SONS'
FELT-FACE
NEVER-GALL
COLLARS

Costing no more than any good collar, and positively guaranteed or your money back.
A selling agent (dealer) in every town. If none in your town, write us for the name of the nearest agent.

W. DAVIS & SONS, 2040 Howard St., San Francisco.



Drop a line to Dr. Korinek today and ask for his FREE list of remedies—if you have a sick animal on the place now write at once for FREE advice.

Dr. C. J. Korinek is a graduate of Ontario Veterinary College of the University of Toronto. He has practiced over 12 years, has been Oregon State Veterinarian under two governors and served four years as president of the Oregon State Veterinary Board.

Dr. Korinek is a Veterinarian of National Reputation

The FREE Consultation Department of Dr. Korinek's is doing a great good for farmers all over the Pacific Coast. He answers by personal letter all inquiries regarding sick animals absolutely free of any cost.

Write for literature. Free sample of Dr. Korinek's Calf Powder upon request.

KORINEK VETERINARY REMEDY CO.
MEDFORD, OREGON, U.S.A.



BLACK LEG
LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Cheap, fresh, reliable; prevents Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkge. Blackleg Pills \$1.00 50-dose pkge. Blackleg Pills 4.00 Cutter's Blackleg Pill Injector 1.00

Discounts: 250 doses, \$9.50; 500 doses, \$19.00. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O. we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.

Greatest Importation of Percherons

EVER BROUGHT TO THE PACIFIC COAST

Two carloads arrived at our Oakland barns February 26; nearly every stallion a coming 3-year-old, and all weighing well over a ton. Leading horsemen say they have never before seen such great weight in stallions of the age. Several prize winners in France among them.

Here are a few descriptions: **Jolicouer** (85324), 97567; 5-yr.-old handsome Black with white feet; massive bone; weight 2300. **Lalew** (99457), 96921; 3-yr.-old Gray; good length of body and hip; perfect conformation; weight 2150. **Lit** (99478), 97565; 3-yr.-old Dark Gray; dashy style, splendid action; weight 2000. **Lisbourg** (102211), 96918; 3-yr.-old Dark Gray; strong body, massive deep chest; weight 2100. **Layard** (100953), 99096; 3-yr.-old Dark Gray; round full body, extra heavy muscle; weight 2050. **Lousset** (100840), 97578; 3-yr.-old Dark Gray; has qualities sought after in typical drafter; weight 2000. **Liniment** (100344), 101509; 3-yr.-old Dark Gray; clean cut, of exceptional conformation. **Julep** (84899), 83998; 5-yr.-old Gray; silver mane and tail; active and well set up; weight 2050. **Loucheur** (99900), 99098; 3-yr.-old Jet Black; thick drafty type; weight 2000. **Lamiral** (98998), 101841; 3-yr.-old Dark Gray; silver mane and tail; breeding unexcelled. **Kino** (see cut). **Laurier** (97950), 101837; 3-yr.-old Black; rugged type, broad back and chest; weight 2200. **Loiret**, 97629 (99980); Dark Gray; splendid back, powerful muscle, fine long neck; weight 2100.



An exact reproduction from life of the famous 4-year old KINO, (91707) 89668, weighing 2140 lbs.

Every stallion in the lot is a very heavy boned horse of the best conformation and purest lineage, and all very recently imported.

Our big importation last December was exhausted in less than two months. These will go as quick. Be sure to see them at once. Prices \$1600 and up

CATALOG ON APPLICATION

McLAUGHLIN PERCHERON COMPANY

America's Leading Horse Importers

Oakland, California

CALIFORNIA DRAFT HORSES FOR CALIFORNIA.

(Continued From Page 305.)

ducting an experiment in raising its own horses.

With the future demand so promising, and with climatic and feed conditions far more favorable than in the

ing weakness or unsoundness. Conversely of course, the lack of education has resulted in the lack of interest; for when our opportunities are generally known, California will leap forward in horse raising.

The first line of education required is to spread knowledge of the needs, possibilities, and opportunities for great profit from intelligent horse

of England, Belgium, and France are wise enough to keep their best individuals at home. The French government has for the past hundred years supervised the industry and now owns large studs of the draft stallions of that country. Within any pure breed of any kind of animals there is considerable variation between individuals, in size, conformation, digestion,

ca get those which the foreign breeders do not insist on retaining. Even at that, our imported horses are the best yet obtainable, and in any event every breeder to work intelligently must know the ideal form of that breed and must be able to detect variations from that form as well as tendencies toward unsoundness. This will involve ability to look up the history



California Importation of Draft Stallions, November 1913, by McLaughlin Percheron Company, Oakland.

eastern States, there is every reason for an awakening of interest in horse breeding on our ranches wherever horses are used.

EDUCATION AND INTEREST.—The lack of interest heretofore has been a prime cause for lack of education, in selecting the best individuals and in detect-

breeding in California. We need to know of the great demand for sound horses and the requirements of the draft horse market.

SELECTING BREEDING STOCK.—We need to know how to select breeding stock.

It is a notable fact that the breeders

and tendency to unsoundness. This variation is of course infinitely greater in mixed stock than within the pure breeds, because persistent selection for the best qualities has very largely removed the tendency to vary from them. Yet there is a difference between individuals; and we of Ameri-

of the individual's ancestors.

The best individual, with the best ancestry is absolutely necessary to production of the best foals. For however good the conditions for rapid growth may be, a foal cannot develop qualities which are not in it to start with. And good care can scarcely

Heavy Milkers—Young Cows

140 GRADE HOLSTEIN COWS, AT AUCTION,
MARCH 20th AND 21st

Having sold my lease on the Diepenbrock Ranch, on the above dates I will sell all my Grade Cows, without reserve, to the highest bidder.

Over one hundred cows in milk and about forty springers; this stock all came from the East and are now in their prime; all are five and six years old and mated with pure-bred sires.

This herd has the reputation of being the heaviest milkers in Northern California.

Sale will be held at 21st and Y streets in Sacramento; take 21st street cars.

Sale will be held under cover; rain will not interfere.

I will also sell two young pure-bred bulls and six pure-bred heifers of choice breeding; pedigrees of these will be furnished at sale. Sale opens at 10 a.m.

E. J. WELDON,
Box 962, Sacramento.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop.,
Davis, California

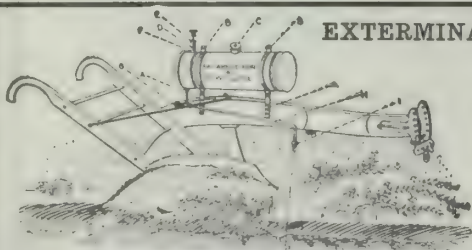


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EXTERMINATE MORNING GLORY

Johnson Grass,
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Insects and Germs that
dwell in the ground
with **NONPAREIL**
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PLOW TANK

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, \$8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

Now is the right season to do the work. Farmers have tried useless methods for years. Nonpareil with Presto Plow Tank does the work.

One large grower has purchased up to date this year \$2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphids, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes
For Sale. Individual or Carload Lots.



PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
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LARGE TYPE

YOUNG STOCK FOR SALE. BOTH SEXES.

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overcome inherited poor form or tendency toward unsoundness.

Education, then for intelligent selection of breeding animals is one of the first needs in awakening the interest that will bring California horse-breeding to its own.

BETTER STALLION BUYING.—And having become able to select our horses intelligently, we need a revolution in the system of buying breeding stock.

It is now the practice to buy from the horse agents, having only one or two horses to choose from and paying by bankable notes. If the same company of farmers would borrow the money from their local banks and send the best horseman of their number to the importer's stables where he could choose from the large number on sale and pay cash, he would get the stallion much cheaper and the importer would be better pleased.

PURE BRED SIRES.—At all times, the improvement of horses and their prices demands that every foal born be sired by a pure-bred. This would work such a rapid improvement in the heredity that our unequalled climatic and feed advantages would have a full chance to do their work in developing the inherited qualities.

BROOD MARES.—To invest in pure-bred mares in order to raise pure-bred stock, a preliminary study is necessary for most of California farmers, of all the breeds, from the historical, theoretical, and practical standpoints, so that in choosing the breed and the individuals to breed from they will know "why" for every point in the animals they choose.

Brood mares require better care than common stock—there is greater financial loss in case of barbed wire cuts, etc., loss or sickness and stunting of the offspring by lack of proper feed and care of mare and foal.

It is the practice of many ranchers to buy the wornout or crippled mares from city draymen and to breed them. A good draft mare can stand the city work ten or twelve years, though it is a pity that she should have that work to do. Her long service at a hard task proves her suitability as a parent of other good drafters. But by this time she is about fifteen years old and very probably will not breed at all. In any event, she is past her best producing age which is four to ten years. Mares which develop spavins, side-bones, and the like in a few years' service show weakness which it is generally admitted will descend to their offspring. The best interests of horse breeding demand that discarded city mares be not used for breeding.

FAST GROWING FOALS.—The foal must be kept vigorously growing and fairly fat from birth. Bran and oats with plenty of green feed such as alfalfa and cultivated grains, and grain hay are considered the best feeds for growing horses. Crushed or boiled barley is as good as oats for mature stock but should be fed very cautiously to brood mares and colts. These feeds are grown to perfection in almost any part of the State. Alfalfa makes early and heavy growth but users of draft horses expect alfalfa horses to lose about 200 pounds when put to work, and they don't like it.

Whether pure-bred or grade horses are raised, it is usually as easy and always more profitable to raise the type demanded by those who are willing to pay the high prices. There is a superabundance of the light weight illy formed milkwagon horses while

the sound well formed heavy drafters, 1400 to 2000 pounds, are so scarce that we go East for them.

DRAFT HORSE LOCALITIES.—It is well to note that although the San Joaquin country is now the leader in the number of stallions, and that even this hot dry section is far more favorable to horse growth than the central western states, the best growth of draft foals is likely to occur in the hills along the coast where extremes of climate are rare. Cool moist weather is good for them, hot moist weather and flies are not. Soft marshy land tends very noticeably to make soft spongy hoofs which flatten out quickly when put on city streets or state highways. This flattening of the horn lets the frog and sole take the weight and jar, and puts the horses quickly out of commission. It is surprising to see how many of the city dray horses are shod with bar shoes and quite often cushioned with leather to ease the tenderness. The upland keeps the feet in much better condition, and it is claimed that the feed there grown and the exercise of climbing produce tougher and finer grained bone and flesh putting the horses into shape for work when needed.

MEANS OF AWAKENING INTEREST.—The education of California's citizens as to the profitableness of horse breeding in our State may well be pushed by four agencies at least.

AGRICULTURAL PRESS.—Of course the agricultural and county press can be depended on to uphold progress in intelligent horse raising.

And when sufficient interest is shown, the State University will take a more active work in disseminating progressive principles and practices. Wisconsin University did not wait for such interest, they aggressively aroused it and today Wisconsin is one of the leaders in good horse breeding.

STATE AND COUNTY FAIRS.—"Wouldn't it be a fine thing to have a class at the State fair for stallions accompanied by several of their offspring," exclaimed a well known horse man. "Several classes might and should be made for horse exhibits at county and district fairs," says another. "The boys ought to be offered premiums for the best grade or pure-bred colts they would exhibit. Boys need the county fairs where they may learn just what a perfect horse would look like and to learn the merits of the different breeds." And all horse stock exhibited should be examined for unsoundness before entering the judge's arena. It is unfair to the judge to require of him such an examination, and it is unfair to the owner of sound horses to permit unsound ones to draw the premiums.

HORSE BREEDERS' ASSOCIATIONS.—While there are a very few local horse breeders' associations in the State, there ought to be one in every township where horses are bred.

We could very well imitate Wisconsin whose stallion registration laws we have copied, in pushing the organization of horse breeders. The department of horse breeding at their University, in charge of Dr. A. S. Alexander has already organized local horse breeders' "Clubs" in all parts of the State. These locals are affiliated with county "Clubs" which meet periodically for discussion and to initiate organized efforts for better recognition at the county and State fairs, and to discuss improvements in the horse laws.

Every member pledges himself to use only pure-bred sires on all kinds of stock. Every annual bulletin from the department of horse breeding reports improved horse conditions and fewer new licenses requested for grade and scrub stallions.

STALLION LAWS.—California has a law requiring enrollment of all stallions used for public service. Licenses are issued to all which are certified free from certain enumerated unsoundnesses and diseases such as spavin, ringbone, curb, heaves, roaring, glanders, etc. But every license must state whether the stallion is pure-bred, cross bred, non-standard bred, grade, or mongrel. Copies of this license must be posted inside and outside every barn where the stallion is used for service. Such labeling is required on all posters and advertisements of the horse, so there is no excuse for the mare owner ignorantly using a low bred sire.

LAW POORLY ENFORCED.—However, it is notorious that inadequate physical examinations are very common. Complaints signed by three parties will cause a more thorough examination, but who of the human species is willing to ruin his neighbor's business and gain his everlasting enmity by taking the trouble to complain and prove unsoundness in his neighbor's horse. Even competitors will rarely do this. Thus the law is very poorly enforced. It is estimated that at least 20% of the licensed stallions are illegally unsound, and getting offspring which will continue the downward pace.

MEANS OF BETTER ENFORCEMENT.—It is suggested that the only way to enforce the law is to have a sufficient force of salaried State veterinary officers personally and thoroughly to inspect every animal used for service, and effectively dispose of the unsound ones, the State standing part of the owner's loss. Likewise, since it is illegal to use an unsound stallion, enforcement of the law could be helped by requiring a written clean bill of health, signed by a State veterinary inspector, at the sale of every stallion. The buyer, at least, can be depended on to complain if the horse is unsound.

STATE HORSE BREEDERS' ASSOCIATION.—A most effective inauguration of educational movements, the securing of adequate laws for the improvement of horses in our State, and the more equalized distribution of pure-bred stallions will early follow the organization of a State Horse Breeders' Association such as is being much favored by leading breeders throughout the State. All farmers should join such an organization for the educa-

tional value of it and to prevent too radical action all at once in favor of any one section or class of horsemen.

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Horticultural Engineer and
Land Expert.

Examination of Lands. Adaptation of Crops to Soil and Climate. Forty years' practical experience in foothills and valleys of northern California with the Orange, Olive, Fig and Vine.

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The AUTOMATIC
Self-Contained Combination
Gasoline Engine and Cream Separator

You'll be astonished at low price, delivered with demonstration.

Strongest guarantee of dependability. Most sanitary. Skims faster than 10 men can milk. Needs no watching. One size for any size dairy. Thousands in satisfactory use everywhere.

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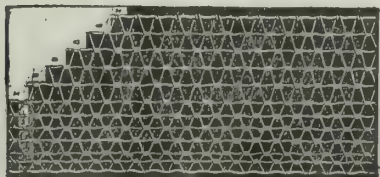
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by Backache

The New Way
by Automatic

Write for full particulars, prices and catalogue.

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201 Howard St., San Francisco.

KOKOMO Self Regulating FENCE



STRONG Because it is made of large High Carbon Steel Wires.

DURABLE Because it is double galvanized and all wires interwoven and securely locked at each intersection.

CHEAP Because it is sold by actual weight at DIRECT FACTORY PRICES.

Write for catalogue and price list.

CALIFORNIA ANCHOR FENCE CO.

822 E. Main St.

Stockton, Cal.

Dairying for Fertility.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

There are few, if any, districts in the State that have been more productive in the past than the section lying along the east side of the San Francisco bay, adjacent to the towns of San Leandro, San Lorenzo, and Hayward; in fact, the soil has been so rich that good crops of vegetables have been harvested for a great many years, and that means that the soil has been kept pretty busy all of that time.

Peas, tomatoes, rhubarb, cucumbers, sweet corn, and various other of the larger vegetables, as well as such fruits as cherries and apricots, have been the principal crops grown, and while most any other crop will do well, the price of land has become so high through its close proximity to Oakland and its residential possibilities that only such products as the above could hope to earn interest on the price of land and pay the expenses.

Fertilization has been carried on more or less extensively by most of the farmers, but in most cases these fertilizers were bought and hauled from the city. This worked all right for the small farmer who had only a few acres to keep up, but for such places as that of the Stenzil brothers who own 1000 acres of land, the

scheme did not work out so satisfactorily and the result has been that some other means was necessary.

Some of this ranch is planted to fruit, but the most of it is used for the vegetable crops above mentioned, so that the ground may be plowed up and used for other crops at most any time. How to keep up the fertility, necessary for large crops, without buying fertilizers on the outside, was the main question. Alfalfa could be profitably grown for this purpose, for by keeping a part of the ground into alfalfa, later to be plowed under as a fertilizer, the ground would gradually be built up, and could in that way be kept in good fertile condition.

This plan seemed so good that it was decided to carry it out and as a result about 50 acres were planted. Now the alfalfa proved that it would grow all right, but it was found that the 50 acres would produce more than the farm horses could consume, and as the farm was so conveniently located to good transportation facilities, it was decided that a well equipped dairy would help along the good work of fertilizing, and also pay its own way, for the alfalfa fed out to good cows would sell for more, in the shape of sweet milk, than it would as baled hay and instead of sending such valuable fertilizer from the ranch, practically all of it could be used in bettering the soil. Anyway the building up of the soil was to be the first consideration, all of the time, and the owners were not so particular whether the dairy paid any more than the operating expenses, so long as their main object was accomplished.

About three years ago a start was made along the lines outlined, a bunch of grade cows having been purchased and the dairy started. It was soon decided that it would be a valuable side line to the place, so in a short time preparations were made to construct modern buildings and start a herd of pure-bred Holsteins, which were to be gradually enlarged upon until such a time that 200 registered animals could be kept.

Although considerable expense was gone to in erecting modern buildings, and in purchasing good stock, the same idea was kept in mind of building up the fertility, of the soil, and for that reason it is now planned to increase the alfalfa acreage to 100 acres and this amount will be kept planted all of the time, although of course the alfalfa will be rotated with other crops, from time to time, in order to further the chief object of the undertaking.

With so much stock the amount of alfalfa acreage is not sufficient to supply all of the feed needed so other feeds are used in connection, among them being mangels. These can be grown in large quantities on the ranch so also come into the general scheme. The only feed purchased on the outside is brewers grain, which is bought from the breweries, in Oakland, and has proved a valuable addition to the ration fed.

Although such plans as this have long been considered the ideal way of farming, there have been very few California farmers who have carried it out, on so large a scale as seen on this ranch, and the example of such undertakings should do much toward the higher development of agriculture in the State.

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12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

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FIVE MAMMOTH MISSOURI REGISTERED JACKS. Large, heavy boned. Black with white points, 15 and 15½ hands high. 4 and 5 years old. Colts to show. For further particulars inquire of

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Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

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One of our customers who is using two 20 x 40 Silos says:

"By siloing my first and last cuttings of Alfalfa I cut down my mill feed bills over \$4000.00 in one season, and the feeding of the Ensilage with chopped Alfalfa Hay increased the milk production from my 300 cows at least 10%. I consider the Silos saved their original cost the first season."

Ideal Green Feed Silos are a De Laval product, made of the best materials in the best equipped mills on the Pacific Coast, and in every essential feature are built to suit California climatic conditions and to produce good Ensilage.

You would not purchase a leaky can for preserving fruit. Why take chances on a leaky Silo when you can buy a perfect Ideal Green Feed Silo.

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PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.

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is easy to set up and take down. Simple in construction, not easy to get out of order. The entire frame is one solid piece of semi-steel. The bearings are always in line, run smoothly and will not heat. The feeding mechanism is geared to the main shaft—always gives you the desired length of cut. The Papec Ensilage Cutter is not chain driven, but has heavy gears which transmit all the power. It cuts ensilage perfectly and swiftly—as fast as you can bring the corn to the machine.

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Sold by Delta Construction Co., Sacramento, California.

A California Breeders' Consignment Sale of 96 head of Registered Jerseys, 96 head

Will be held on G. O. Hillier Farm at MODESTO, CAL., on

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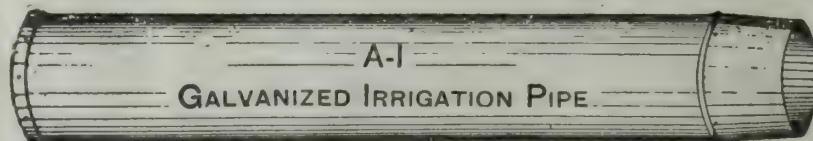
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BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).

A-I Pipe was awarded first prize at Fresno and Santa Clara County Fairs in 1912.

Send for new catalog with prices and valuable information.
AMES-IRVIN CO., 8th and Irwin St., San Francisco.

AGRICULTURAL REVIEW.

(Continued From Page 310.)

Dried Fruit Notes.

J. P. Dargitz, manager of the California Cured Fruit Exchange, insists that growers should not contract their dried peach crop of 1914 at the price of 4½¢ as some are now doing. He points out that practically every market will be clear of dried fruits before the new crop is ready, that the financial condition of the country is improved, that members of the Exchange will have received more than 4½¢ for the 1913 crop when accounts are closed, and that it is unfair to themselves to sell at the cost of production before the buds are open.

Probably the last car of dried apricots from Santa Clara valley was sold March 2nd by Willson at 15¢. Had he not held them, the price would have been 10 to 13 cents. Mr. Willson reports the past season's prunes well cleaned up ready for good prices this year.

Fertilizing Notes.

Nitrate of soda deposits already surveyed in Chile amount to 250,000,000 tons, and there are vast quantities yet unsurveyed, according to William S. Myers, who was the delegate of the Chilean Government to the Eighth International Congress of Applied Chemistry. The surveyed deposits will last 200 years, even with steadily increasing consumption.

It is noticeable that those ranchers who had cover crops in their orchards have not lost land by the recent storms in southern California, while those whose land was loose from recent cultivation had big ditches cut through their fields and groves in many cases.

The county adviser of Humboldt county found he could reduce the cost of lime for agricultural use from \$24 to \$8 per ton laid down at Eureka. Then he reduced the cost to \$1.50 by discovering a calcium mountain and reducing it to lime by use of sawmill waste. He has earned his salary.

A carload of fertilizer costing \$600 has been received for use in Shasta county by Chris Tharsing.

Figs in California and Smyrna.

Fig culture is the latest of the twenty-nine free agricultural correspondence courses offered by the University of California.

The Smyrna Fig Packers Co., of Smyrna, are facing dissolution since the Turkish courts do not recognize the company and will not enforce its contracts. It was organized in 1912 to control the fig-packing business.

WITH THE LIVE STOCK MEN.

Cattle prices at the Portland Union Stock Yards were steady last week, 1200-pound steers selling at an average of about \$7.82; best cows, \$7.05; and calves, \$9. Top hogs dropped 15¢ during the week to \$8.70. Yearling wethers brought \$6 and lambs \$6.75, with the demand exceeding the supply.

Dairy products and by-products of the world at the Panama-Pacific Exposition will be housed in their own building, 200 feet square, to be erected by the California Creamery Operators' Association, the California State Dairymen's Association, and the California Managers' Association.

A couple of young cattle in Queensland, Australia, recently died from licking powdered raw carbide such as used for making acetylene gas. The vitals were burned.

Drinking from the mill pond of the Tonopah Mining Co., into which cyanide solution had been drained, recently killed 1200 sheep.

Richard Hambey, of Monterey county, has sold his 3000-acre stock ranch to J. S. Woolman, of Paso Robles, and will go into the real estate business.

Dairymen of Australia are becoming alarmed at the increased consumption of oleomargarine in England, which now equals the consumption of butter. This is laid to the inferior quality of butter and efforts are being made in Australia to have cream more carefully handled in order to produce good butter and save their export trade.

W. A. Keddie, of Fallon, Nevada just sold 35,000 fleeces to a Boston wool firm. This is one of the largest wool transactions in the State this winter.

Ice-crusts snow in Elko county, Nevada, threatens to cause starvation of 150,000 sheep.

W. H. Gibbs, of Madera county, paid nearly \$8000 for 162 Mexican beef cattle in Bakersfield last week. This stock is of better quality than used to come from Mexico.

The Livermore Horse Show opened February 28 with 150 fine draft animals competing for prizes. H. M. Christensen is president and William Macdo is secretary of the Association.

I. A. Starr, of Solano county, sold over a thousand Belgian hares at 16¢ per pound in 1913. The market is always good. He transfers young ones from large families to the mothers of smaller numbers, and matures a larger per cent.

J. W. Love is now foreman of Miller & Lux's Cuyamo horse and cattle ranch in the Santa Barbara foothills.

England's shipments of condensed milk to the Philippine Islands fell from \$578,568 in 1912 to \$350,554 in 1913.

Dried beet pulp has no lime in it, according to J. A. Drifill, manager for the American Beet Sugar Co., Oxnard, Cal., who says that "neither the wet

England re-exported to the United States 44,536,506 lbs. of wool in 1913 as compared to 81,471,033 lbs. in 1912.

DE LAVAL CREAM SEPARATOR

the most important
machine used on the farm

SOME BUYERS OF CREAM SEPARATORS do not stop to think why their purchase of the best cream separator is of greater importance than the purchase of any other implement or machine of any kind used on the farm, or for that matter anywhere else.

NEARLY EVERY PIECE OF FARM MACHINERY is only used a few weeks during the year, if that long, and when it is used simply saves time or labor over some other way, with comparatively little difference between makes of such machines except in design or size or possibly that one is better made than another and so lasts longer and probably costs more proportionately.



THE FACTS ARE very different in the case of the cream separator, which is used twice a day every day in the year, and very different as between the De Laval and other cream separators because the use of any other separator or creaming system involves not only the saving in time and labor a De Laval machine would

effect but an actual waste in quantity and quality of product a De Laval machine would save.

The Cream Separator the most wasteful or most profitable

THIS IS THE VERY GREAT DIFFERENCE THAT MAKES the cream separator the most important of farm machines, the most wasteful or the most profitable, because used so often and involving a waste or a saving every time it is used. This is the reason why there are more De Laval separators in use than of any other kind of farm or dairy machines the world over, and more than all the other makes of cream separators combined.

NO MATTER WHETHER YOU HAVE YET TO BUY A separator or are using an inferior machine, you must be interested in what a De Laval—not a 10, 20 or 30 year old one, but a De Laval machine to-day—would do for you, and that every De Laval local agent will be glad to make plain to you by the demonstration of a machine itself.

IF YOU DON'T KNOW THE NEAREST DE LAVAL agent, simply write the nearest main office as below.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

nor dried pulp are brought in contact with lime or any preparation of lime at this factory from the time the beets are sliced until the dried pulp is sacked." The lime is added to the

juice after separation from the pulp. F. B. Case, manager for the Southern California Sugar Co., says that lime would cause the pulp to ferment and decay.

Taking Care of Incubator and Chicks.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Most people who undertake to run an incubator know that the directions that come with the machine are about right for that machine. Some differ a little in minor details, but the general principles of incubation by artificial means are about the same. These consist chiefly in regularity in filling the lamp, airing the eggs, and turning them and keeping the right temperature at all times. The difference lies in diverse opinions about moisture and as each maker of a machine ought to know better than anyone else what his machine requires I always say "follow the directions" that come with the machine and pay no attention to what others say.

HANDLING THE INCUBATOR EGGS.—A great deal can be learned from the mother hen if we take time to watch her. If she is allowed to follow her own instincts she will rarely leave the nest the first two or three days; and if she does, will not stay off long. So with artificial incubation; after putting the eggs in they should not be disturbed the first day at all, on the second day just take out the trays and turn them end about and put right back closing the door at once. On the third day take out one tray at a time, turn the eggs over as quick as possible and put back in the egg chamber, "end about" again. Do this with every tray and keep it up all through the hatch as this helps materially in evening the heat over the eggs. Of course I am taking it for granted that the incubator was set level in the first place, if it was not you will not get a good hatch no matter how good the eggs were or how faithfully you attend to it.

After five days you may take more time to turn the eggs; and after seven days you may leave them out five minutes, provided the air in the room is not too cold. If it is, throw a cloth over the eggs, and just as soon as they feel cool to the back of the hand put them into the incubator. As the hatch proceeds, keep the eggs out a little longer each day, and after the tenth day commence rolling the eggs gently back and forth or round and round every time you take them out to air, this gives the growing embryo exercise, and if done rightly prevents cripples, other things being all right.

PREPARATION FOR HATCHING.—When hatching time arrives be prepared for it, have your nursery drawers fixed so that the chicks fall on something warm and soft. The nursery drawers in most incubators have too big a drop for the chicks and in this way many chicks are injured. I generally make a nice soft bed with a layer or two of cotton batting then spread a clean gunny sack, cut to fit, over that and have a place fit for a chick to fall on. Adjust your thermometer so you can see it without opening the door; then gird yourself with patience and wait for results. Don't open the door for your best friend until you are quite sure all chicks are out that are going to hatch. Then open the doors and ventilators, get the shells off the trays and let the chicks have a breath of oxygen, but not enough to chill them.

CHILLING A SOURCE OF TROUBLE.—Any chill the chicks may get at this

stage or later when removed to a brooder may be dangerous in many ways, and it is almost always the first cause of diarrhea. In the eastern States they are much more careful over these things than we are, because it is so cold there that unless they were careful they would not save any chicks at all. And while we are blessed with favorable weather nearly all the time it takes but very little coolness to chill a newly hatched chick. Have the brooder ready, that is clean and all ready for the heat to be applied when the chicks are hatched, but don't hurry about getting them out of the incubator, they are much better left in the warm incubator for thirty-six hours.

FEEDING.—Incubator chicks do better if left entirely alone for forty-eight hours and even longer. I have left them seventy-two hours as Mr. James Shackleton advised, but I can't do it always; my sympathies get away with me, but I really believe it is better. It gives time for the yolk to be fully absorbed. Then when food is given it is properly digested and none of it sours. If this is done and care taken the first few days to feed nothing that will start up a sour condition in the bowels, the chicks will commence to grow right away.

Let the feed be rather sparing the first few days, bread that has been toasted slowly in an oven and then rolled fine is the cheapest good chick food I have been able to find. After one or two feeds of this rolled bread, pour a little boiled milk on some and let it cool then feed. This is very nourishing, see that the chicks are well supplied with water that has had the chill taken off and vary the feed as the chicks get older. Use any good brand of chick feed scattered in cut alfalfa or some other short cut fodder and rolled oats with an occasional feed of moistened shorts bran and rolled oats. Onion tops cut fine make a good healthy relish and if there is milk to be had, cottage cheese or curd makes big strong chicks. We must not forget that as the chicks grow they will need more feed. It is a good plan to leave a dry mash before them a good portion of the day and let them help themselves. There is nothing gained by trying to skimp in feeding chicks, plenty to eat but not a bit to waste should be the motto. Green feed galore if you want to save feed bills; young stock will eat an awful lot of green feed, and if it can be had it is cheaper than anything else. And most any kind will do, because when put to it chickens will eat anything that is green. Of course they have preferences but it all goes when they get hungry. Blessed is the man whose chickens can feed on alfalfa, for he shall inherit much wealth from the eggs.

Alfalfa, the king of leaf and stem products, is the greatest egg-maker I know of, it beats all the patent condiments because it is a high protein food. It is good for poultry of all ages, it makes growth in the chick and eggs in the hen and health for all. If one has infertile eggs from the incubator they can be cooked up and fed in several ways, but the best way is to make a good johnny cake with them, as follows:

JOHNNY CAKE RECIPE.—Break one

dozen eggs into a quart of sour milk, add one teaspoonful of saleratus dissolved in a little hot water. Make a stiff batter of ground corn, oatmeal,

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

ORDERS TAKEN for day-old chicks and eggs for hatching from the following breeds: White Leghorns, Buff Orpingtons, White Wyandottes, Rhode Island Reds, Black Minorcas, Barred Plymouth Rocks and Light Brahmas. All good laying stock. Eggs \$1.50 per 15. White Leghorn day-old chicks \$10 per hundred, and all other breeds \$15 per hundred. For further information address Mrs. I. H. Tuttle, Box 473, Watsonville, Cal.

BABY CHICKS all sold for season! Special on eggs for February: MacFarlane strain White Leghorn, \$1.50 per 15; \$2.50 per 30; \$6.00 per 100; \$50.00 per 1000. Owen Farm and Fishel strain White Plymouth Rocks, \$2.00 per 15; \$4.00 per 30; \$10.00 per 100. MacFarlane strain White Leghorn cockerels, \$3.00 each; \$30.00 per dozen. Ten acre plant, 15,000 square feet under roof. Address Dept 2, Newton Poultry Farm, Los Gatos, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities; \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, San Luis Obispo County, Cal.

EIGHT CHAMPION BREEDING PENS (Lester Tompkins strain) S. C. Rhode Island Reds, trap-nested stock. Eggs for hatching. Cockerels for sale. Fertility guaranteed. At San Francisco show, 1914, 1st pen, 2nd and 5th pullet, 4th hen on 5 entries. Wm. Larm, 746 Lincoln Ave., Alameda, Cal.

WHITE LEGHORNS—Vigorous winter layers, selected two years by Hogan method. Mated to potent males from Walter Hogan's own prize laying stock. Eggs, \$5 per 100. High fertility; 4000 hatched here this season, over 90% fertile. **VERDE POULTRY FARM, LIVERMORE, Cal.**

OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for March, \$10; April, \$9; reduction in quantities. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

S. C. WHITE LEGHORNS—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected hens, bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. Bihn, Santa Clara Valley Hatchery, San Jose, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

BABY CHICKS AND HATCHING EGGS—Beautiful White Orpingtons; also the popular new breed, Buff Minorcas. All thoroughbred, Hoganized stock. Mrs. C. A. Sanford, Mountain View, Cal.

FOR SALE—White Plymouth Rock eggs for hatching. Selected stock. U. S. Fishel strain. \$2 per setting. Special price on large orders. Mrs. J. B. Tupper, Ceres, Cal.

FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

BRONZE TURKEY EGGS, \$3 per setting from largest Turkey farm in Stanislaus Co. Crows Landing Turkey Farm, Box 227, Crows Landing, Cal.

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ORPINGTONS—Buff and White. Stock reasonable. Eggs \$3 and \$5 a setting. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

MAMMOTH BRONZE TURKEY EGGS from the largest and best stock in the West. Special prices. Geo. A. Smith, Corcoran, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BARRED ROCKS ONLY—Am booking orders for eggs and chicks for March delivery. Send for folder. G. L. Hawley, Madera, Cal.

TOULOUSE GEESSE EGGS—5 for \$1. Indian Runner duck eggs, 13 for \$1. F. Sewall Brown, Newark, Cal.

CHICKENS, DUCKS, GEESSE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties. L. W. Clark, Petaluma.

LIGHT BRAHMAS. Breeding stock for sale. Eggs for hatching \$2.50 per setting. Box A. B., Pacific Rural Press.

BRONZE Turkeys and Eggs. Ed Hart, Clement, Cal. Large size, good plumage, early maturity.

PETALUMA BROODER STOVE, Haywards, Cal. Best on market. Latest improvements. Catalogue free.

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FOR SALE—Trio of White African Guineas. Price \$5. W. R. Triggs, Watsonville, Cal.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

BELGIAN HARES. THOROUGHBRED BELGIAN, with or without pedigree. THE OLD HICKORY SUPPLY CO., Dept. 3, San Francisco, Los Angeles.

EGG LAYING CONTEST LED AL THE WAY

At the Napa Egg Laying Contest our pen finished second, 66 pen scompeting. In our own class, White Leghorns, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

BLOM & SON, Napa, Cal.



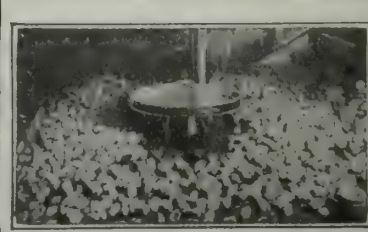
Free Book

giving a full account of hatching, raising, and caring for chickens, with details of a Complete System of Feeding.

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THE FRESH AIR BROODER STOVE

It supplies the chicks with PURE, WARM, FRESH AIR THROUGH THE BASE. Reduces former oil bills one-half and regulates to a degree.

We manufacture brooding systems of all kinds.

Get Our Catalogue.

J. E. KRESKY, Petaluma, Cal.

and shorts; a little salt and charcoal and also a little bone meal may be added. Bake well but not too hard. I like to bake in pans about two or three inches deep then split the johnny cake in two, set on the brooder house floor crust side down and let the chicks peck at it. This furnishes exercise and keeps them so busy they have not time to acquire bad habits.

TURKEY TROUBLES.

One of our subscribers writes: "I wish some advice as to what to do for my turkeys. They mope around for a couple of weeks, perhaps longer, then die. They refuse food entirely the last week. The droppings look like a beaten egg, yoke and white beaten together. I opened one that had run the full course of the disease and found the contents of the crop were sour and gaseous, the crop contained wheat and corn that had been eaten a week before. The liver was spotted with yellowish white spots as large as a pea.—Mrs. C. A. S."

Answer: I think your turkeys have a severe case of indigestion. The first thing is to get them into a good common every day way of feeding. As our correspondent does not state how or what she feeds we can only surmise that there has been something wrong, because every effect must first have had a cause. Free the house of cobwebs, dust, and all dirt; scald out all drinking fountains, no matter how clean they appear, give one teaspoonful of tincture of Nux Vomica to every quart of drinking water and see that they get no other. Feed a little grain at regular times and make them exercise to get it. Give green feed any

time. Keep this treatment up for one week, then for two weeks give one-eighth of a grain of strychnine in a quart of water and I think you will soon see a big improvement. Had you given particulars as to feeding it would have been better.

AFRICA BEATS US ON OSTRICHES.

A South Africa ostrich breeder, who recently told officials of the department of agriculture that the United States is 25 years behind South Africa in ostrich raising, has stirred the ambition of agricultural experts here.

The department has an employe in New York studying the question of selection and proper grading of the feathers, and later he will be sent to Arizona to study problems that have arisen there. Feathers from ostrich flocks in Arizona have sold for \$90 a pound. Most of the ostriches in this country are in Arizona, and department officials believe there is a possibility of an extremely useful industry in American ostriches.

JAILING OF THE CHICKEN TRUST.

Thirteen members of the so-called "chicken trust," otherwise the New York Live Poultry Dealers' Association, convicted of restraining trade in New York city, must go to jail.

Their appeal was dehed in a decision handed down today by the Appellate division, and their sentences of three months in prison and fines of \$500 each were sustained.

The higher court found the defendants were in a pool which controlled 90% of the poultry shipped to New York and destroyed competition. The case against them was prosecuted under the State anti-monopoly law.

NINETY MILLION BACTERIA IN ONE EGG.

Following a test by City Bacteriologist Patten of Spokane which showed approximately 90,000,000 bacteria in one egg shipped here in a consignment from China, Manager John F. Arnold, of the Schallinger Produce Co., today sent 100 cases, or more than 60,000 eggs, to the crematory to be destroyed.

THOUSANDS OF PIGEONS LOST.

The world's greatest pigeon farm was destroyed by the Los Angeles river Feb. 22. Thousands of mother birds, circling wildly in the air until night, were an evidence of the distressful situation there.

Only remnants of the score of long sheds which housed the pigeons, estimated at 500,000 in number, are left. Hundreds of thousands of pigeons, both squabs and mature birds, were swept down stream when the buildings collapsed.



JACKSON DEEP WELL TURBINE PUMP

Is the most efficient pump of this type on the market and the simplest in construction. Every JACKSON pump means the best possible pumping economy.

The JACKSON is a pump of the highest service giving quality; it's just the pump you need on your farm.

Bulletin No 47-C on request.

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Deep Well Vertical Motor Driven Turbine Pump

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PERFECT BROODER

Has no equal.

It supplies the chicks with fresh air. Is safe, economical and reliable. Correspondence solicited.

SUTHERLAND'S BROODER WORKS, No. 2 Washington St., Petaluma, Cal.

INCUBATOR CHICKS

White Rock, Black Minorca, White, Brown and Buff Leghorn. All high-class stock. Send for booklet of prices.

MAHAJO FARM, P. O. Box 597, Sacramento, Cal.

FISH MEAT MEAL FOR POULTRY

During the past few years, poultrymen have had much cause for complaint about the steady advance in price, and the almost equally steady reduction in quality, of the beef scraps, through which they derive the animal protein that is indispensable to a high egg yield. It is high egg-production that makes the big profits in the poultry business.

The manufacturers of beef scraps are not to be blamed for this condition. It is entirely due to the growing scarcity of beef throughout the country. Our population has increased right along, while our production of cattle has decreased. This has proven to be a two-edged sword as regards the poultry industry. For, as beef becomes higher, there is a greater demand for meat substitutes like eggs and poultry.

But how are we going to increase egg-production without a liberal supply of reasonably cheap meat feed for the hens?

This problem was solved in Europe many years ago, and, more recently, it has been solved in the New England States. Besides such meat waste as beef scraps, there is but one other practicable source of animal protein, and that is FISH. They have been feeding fish meat to poultry and hogs in Europe for many years, and, in our own New England States, where fish are plentiful, they have been doing the same thing for some years past. In fact, there are today three factories making fish scrap in New England, and we are informed that they can barely keep abreast of the rapidly growing demand for their product.

We started to take up the manufacture of fish meat meal about two years ago, and, after much experimental work in our factory, we finally evolved a process for the manufacture of a product which is far superior to the European fish scraps and the New England Fish Meals, of which we have seen samples.

Numerous feeding tests made with our PACIFIC PIONEER FISH MEAT-MEAL have shown a far higher egg yield than beef scraps, and in not one single instance has our product ever caused a fish flavor in the eggs or meat of birds fed on it. Furthermore, our fish meal does not cause any mortality among laying hens, nor will it kill little chicks, as beef scraps often do to a most alarming extent.

We have been handicapped during the past year, owing to the fact that our output has not been sufficient to take care of the immense demand which has sprung up for our product. However, we are pleased to announce that we have just moved into our fine new plant, where we will have unlimited manufacturing capacity, and will be able in the future to take care of any and all demands made upon us for PACIFIC PIONEER FISH MEAT MEAL.

It may sound a little strange to you at first to "feed fish to chickens," but no stranger than it sounded twenty years ago to feed "beef scraps to chickens." You will ultimately substitute PACIFIC PIONEER FISH MEAT MEAL for the beef scraps you are now using.

So why not start in to do it right now?

WHY WORRY ABOUT THE HIGH PRICE AND POOR QUALITY OF "BEEF SCRAPS?" OUR FISH MEAT MEAL IS THE MOST REMARKABLE EGG-PRODUCING FOOD THAT HAS EVER BEEN OFFERED TO CALIFORNIA POULTRY RAISERS.

**More Eggs
Better Health
Less Mortality
Cheaper to Feed**

WRITE US TODAY FOR SAMPLE, PRICES, AND LITERATURE.

Western Tallow Co.

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ABSOLUTELY NO FISH FLAVOR IN EGGS OR MEAT OF POULTRY FED ON OUR FISH MEAL.

The Home Circle.

A Pink Advocate.

When little Miss Penelope Anderson decided to become a florist, her friends predicted failure. She was too delicate, they said, and hardly more substantial than a flower herself. And a failure it would have been had Miss Penelope selected any other store than



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Only 75c down and then 50c per month, and we ship you this magnificent rocker \$4.35 in all for this handsome piece of furniture. Write for free catalog to-day. You can see for yourself what an elegant rocker this is. It is made of high-grade solid oak, profusely carved. A large, roomy, comfortable, well-made rocker, with high, wide back, fully tufted and buttoned. Upholstered with high-grade black Boston leather. Seat is made over full steel springs, has beautiful ruffled edge. Order No. 000001. This rocker is only one of our special bargains.

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The great house of M. Friedman & Co., with a proud quarter-century record, endorsed by the greatest bank, will trust you and allow you to buy any article on easiest monthly payments. If you want anything in rockers, chairs, bedsteads, carpets, rugs, curtains, refrigerators, crockery, silverware, baby carriages, go-carts, stoves, ranges, or any other article of house-furnishing, don't fail to get our sensational easy terms.

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A daily train, with every comfort and convenience for travelers, including Barber Shop, Shower Bath, Valet Service, Ladies' Maid, Manicuring, Hairdressing, Stenographer, Stock and News Reports.

Clubroom—Observation Car, containing Ladies' Parlor and Library, Standard Pullman Drawing-room Sleeping Cars, Compartment Car, Dining Service unexcelled.

Southern Pacific

THE EXPOSITION LINE—1915

the one she finally chose. It stood on a quiet street, not far from the main thoroughfare, and in a block of small stores all alike as to size and to interior arrangement. The first store was a bakery; the second, a tailor's establishment; the third, Miss Penelope's; the fourth, a barber shop; the fifth, a plumber's; the sixth, a shoe-maker's; and the seventh, a news store.

"Dear me!" said Miss Penelope, with a blush, as she stood arranging a few palms outside her show window, the morning after she was installed in her new quarters. "Dear me! I—I never thought I was the only woman in business in this block till this very minute!" And she hurriedly finished her work and went into her store.

"It's really most embarrassing to have all those men watching one's movements so closely. I ought to have taken that into consideration before I rented this store. I always was timid with people, anyway, and to think that here they are all men, is worse. It doesn't seem as though, at the outset, I could afford to hire anybody but old John to take care of the greenhouse, or I'd get a boy this very day to attend to the plants outside. I don't see how I can face all those eyes staring at me from those windows! I must get over this foolish timidity."

Her thoughts were prevented from dwelling upon her peculiar position by the entrance of her first customer. One of the wealthy Misses Barton purchased three whole dozen of the most expensive pink roses, and wanted to know if such could be had every Wednesday. This transaction so elated Miss Penelope that she forgot her timidity and smilingly went out to add some flowering plants to her sidewalk display. She was just rising from the ground when a voice made her jump.

"Excuse me," it said, "but can I not assist you in lifting those heavy jars? I noticed you had no one to help you, and, business being dull just now, I thought you would let me do something for you. What a fine lot of plants you have?"

It was the barber, her next-door neighbor! Miss Penelope colored until her cheeks vied with her own scarlet geraniums, but the barber apparently did not see her confusion, for he walked right into the store and began to select such flowers as would make a good showing. Miss Penelope herself could not have done any better, and, furthermore, he discriminated wisely in placing the plants outside.

"Now," said he, "when it's time to close shop tonight I'll take them in for you."

"You're—you're real kind, I'm sure," murmured Miss Penelope, and she gave him a fresh pink carnation for the buttonhole of his white coat.

He was as good as his word as to carrying in the jars that night, and it seemed only natural that thereafter he should take upon himself this task. On rainy days he would carry out other plants, also, that they might have the benefit of the showers, and Miss Penelope's space being too small for so many jars, he asked if he might not arrange some in front of his own shop, saying, when she expressed a fear that they would be in his way, that they added greatly to the looks of his place, and would draw customers.

The tailor, not to be outdone by the barber, asked that she allow him the pleasure of giving her the front of his

PLANT THESE Roses Now!

They will bloom this May and reach the height of their Perfection to enchant our visitors in 1915

California will entertain hundreds of thousands of visitors in 1915 with its roses. A mammoth flower show will be held. Every person should join to make their city and its environs a veritable garden of roses. Every citizen should have a "flower show of their own," at their own home.

To accomplish this, you must start now. And as a special inducement for you to start now, we are offering these THREE MAGNIFICENT COLLECTIONS OF NOVELTY ROSES AT GREATLY REDUCED PRICES.

These exclusive Howard & Smith varieties are not obtainable elsewhere—and it is only to encourage extensive rose planting now that we offer them at these unusual prices.

These roses are all heavy, two-year-old plants—the result of twenty years of intensive study and cultivation of roses in Southern California.

COLLECTION No. 1

Six magnificent novelty roses:

George Arends, silvery pink and deep rose.

Juliet, an English gold medal variety, deep buff and orange pink.

White Killarney, put white form of Killarney.

Florence Pemberton, silvery pink, looks like a full blown Peony when developed.

Madam Leon Pain, deep silvery pink, large and full.

General McArthur, the best free-blooming dark red.

Regular catalog price on the above, \$3.50.

SPECIAL SALE PRICE **\$2.75**

COLLECTION No. 2

Six superb climbing roses, including four novelties and two best of our general collection.

Climbing Lady Ashtown, deep rich rose pink, a splendid English novelty.

Climbing Pink Cochet, our own novelty of last year. Grand climbing form of the Bush Cochet.

Climbing White Cochet, similar to the preceding, with white flowers.

Climbing Liberty, finest climbing dark red rose in existence.

Climbing Belle Siebrecht, bright rose.

Climbing Gainsborough, dark pink.

Regular price on the above six varieties, \$4.

SPECIAL PRICE **\$3.50**

COLLECTION No. 3

Twelve novelty roses, all excellent varieties, good growers, and free bloomers, with an unusual assortment of colors, most of them unobtainable elsewhere:

Mrs. Myles Kennedy, good in open bloom, perfection in form. Color silvery white, edges of the petals rimmed with deep rose.

Beaute de Lyon, new French rose, deep golden copper.

His Majesty, best dark crimson rose of recent introduction.

Lyon Rose, shrimp pink, with gold and salmon shadings.

R. K. de Saxe, bright pink.

Regular price on the foregoing collection, \$9.50.

SPECIAL SALE PRICE **\$7.00**

Mrs. Arthur Coxhead, immense size flower, dark red in color.

Harry Kirk, rich butter yellow, long pointed bud.

Mrs. Wakefield C. Miller, deep rose pink.

Mrs. Aaron Ward, Indian yellow.

Betty, long pointed bud, salmon pink.

Madam Melanie Souper, salmon and gold.

Laurent Carle, rich, rosy crimson, extra fine.

IMPORTANT! Parties living out of town may obtain collections 1 or 2 by sending us 40c to cover cost of mailing and packing. Collection No. 3, add 80c additional. Where collections are taken from our city office at Ninth and Olive Streets, there will be no charge additional beyond the prices noted.

Special! We will deliver all three of the above collections, worth at regular prices \$17.00, all charges prepaid **\$11.00**

EXTRA SPECIAL OFFER OF RAGGED ROBIN ROSES

Big, heavy, 2-year-old plants, just the kind you need for a Rose Hedge. They bloom every day in the year, giving a constant show of bright red blossoms. They can be planted in hedges, along boulevards, orchards, driveways, etc. There is nothing in the rose line to equal them. You can make your country place a thing of beauty and attractiveness for 1915. A wealth of color which will astonish the visitors during the fair year. They will give an added distinction and value to the country or suburban home.

Our plants are not weaklings, but great big stock fully three feet high, and well branched. They will reach full perfection of flowering by May of this season.

Here are the prices. Can you afford to let this chance slip? 25c each, per dozen \$2.50, per hundred \$17.50, per thousand \$150. Packing free.

Send for our 1914 Catalog

Howard & Smith
NURSERYMEN

NINTH AND OLIVE STREETS, LOS ANGELES, CAL.

Main 1745

F4592

window likewise, and the good will toward sweet Miss Penelope extended the length of the block, so that in time, daily, and especially on rainy days, the stores blossomed out in gorgeous array, and the baker, the tailor, the barber, the plumber, the shoemaker and the news man were regularly presented each with a fresh carnation—but with a difference, for, while the others had sometimes a red, sometimes a white carnation, the barber's never varied in hue—it was always pink, Miss Penelope's favorite color; and he had been the first to show his generous heart.

If the combined force served to bring Miss Penelope customers, she in turn did the same by her fellow-tradesmen, for people began to find an attraction in stores that presented so tempting an appearance from the outside. This inspired the baker to decorate his window with more daintiness than before, and some declared he lay awake nights dreaming over all sorts of new effects in the blending of colored bunting with confections, fancy cakes and the flowers. The tailor showed finer taste than heretofore in the choice of hues for his window; the barber added new sash curtains, flow-

ered with pink sweet peas; the plumber suddenly discovered unknown possibilities in ways of disposing his necessarily unattractive wares, and his combination of soft-toned gas globes, lamp shades and decorated bowls utterly transformed his window; the shoemaker now made a specialty of satin slippers and dainty shoes; and the newsdealer showed his conversion by a tasteful presentation of the best in fashions, literature and art.

With the turning of the tide in their favor they one and all overwhelmed Miss Penelope with kindness. The baker often dropped in with a cake made after a new recipe for her to try; the tailor repaired her shabby jacket, slyly using it as a measure for a new one to be given her at Christmas time; the barber sent his boy to deliver her orders; the plumber presented her with a patent flower sprinkler; the shoemaker, discovering a leak in her old rubber overshoes, fitted her to a new pair; and the newsdealer insisted on leaving her the paper daily.

So thrived Penelope Anderson and the Brotherhood of Carnation until a great change came.

It was one evening in the second year of her reign, and the barber was bringing in the plants as usual. He had the last jar—a pot of forget-me-nots—in his hands, and Miss Penelope had gone to the cooler to select his pink carnation.

"Do you know, Miss Penelope," said he, "I want to add to my business this year? I think of becoming a florist, if you will furnish the advice."

Miss Penelope turned around curiously, the flower in her hand. He was still holding the forget-me-nots.

"Do you believe in the language of flowers?" he asked.

"I—I think so," she replied.

"Well, I do, at any rate," he went on, "for my carnation, being different from the rest—always pink, you know—has told me something; and what do you call this little flower?"

"The—the—why—forget-me-nots!"

"May I die if I do!" exclaimed he. "Now, that is what I've been waiting a year for you to say, but do you really mean it?"

For answer she gave him the pink carnation.

And the workmen are tearing down the partition.—Farm Journal.

Keeping Track of Trains.

At the railway station in a small town a solitary traveler was waiting for the day's only train. Train time came and went, but no train. He went over to the station master, an old dandy: "Say, when does today's train get here, anyway?"

"Oh, dat train won't be in for a long time yet."

In a few minutes, however, a train was seen crawling toward the station.

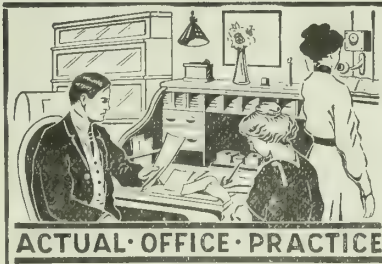
"There comes the train now!" exclaimed the traveler, exultantly, to the dandy. "Seems to me you don't know your business, if I'm not mistaken."

"Say, mister," replied the dandy, "I reckon you's a perfect stranger around here. Dat's yesterday's train, dat is. Today's train won't be in till tomorrow."—Harper's Magazine.

A retired clergyman tells a good joke at his own expense. He officiated as a vacation supply in a suburban church. One Sunday after service, an old lady, the housekeeper in the home of a friend, spoke to him. "I

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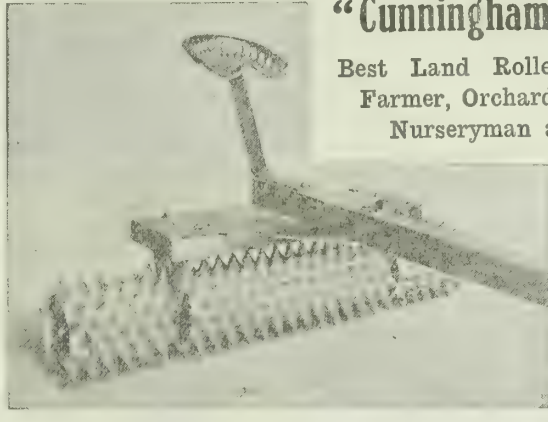


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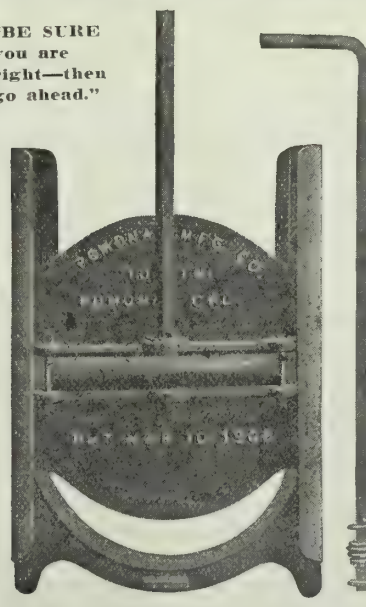
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is a vital necessity where water is delivered through one service pipe to different levels. It is the best and most practical gate on the market—because simple in construction, cheap in price and as durable as solid iron. Locks absolutely water tight when closed, can be easily, quickly and perfectly regulated. Has no rubber or wooden facing to rot or wear out.

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MAKERS OF THE FAMOUS POMONA DEEP WELL PUMP.

Insist on "Pomona" GATES AND VALVES

want to tell you, sir," she said, "how much I enjoy going to church on the days that you preach." The clergyman was much gratified. "Oh sir," she added, with appalling candor, "I get such a good seat then!"—Newark Star.

Home Economics.

How to Economize With Soap.

However thrifty a housewife is there are always the remnants of the toilet soap to be thrown away as being too small for further use. If these odd pieces are carefully saved until you have a quantity, you can then boil them all together and re-make into fresh cakes of soap. This may be done in the following manner: Collect all the odds and ends of toilet soap, crumble them fine, or break into shreds, and put them into a double boiler. Fill the outside vessel with boiling water, set over the fire, and keep it boiling until the soap in the inside vessel is melted. Stir the mixture until perfectly smooth, then pour into a small shallow dish to mold. If more than enough for one cake, pour into a number of moulds. If the remnants of soap are scented, the new soap will probably have a delicate odor of its own, or, if one wishes, a few drops of good cologne or a drop of attar of rose or other sweet-scented oil may be added. If without a double boiler, set a small pail or pan inside a large one. A thrifty housewife who has plenty of time makes a pure and agreeable toilet soap for chapped hands from white castile soap. The soap is sliced very thin and put in a double boiler, with glycerine equal to one-twentieth of its weight. After the soap has melted and mixed with the glycerine let it partly cool, then stir in enough oil of cassia to give a delicate odor, and mould. If essence of orris root is used instead of cassia the soap will have the fragrance of violets.

Spring Cleaning.

Net curtains are usually somewhat troublesome to wash and get up, and if they are not very carefully done the life of the curtain is considerably lessened by each wash. After shaking out the dust, soak in cold water. Put in suds, and boil. Take up, and gently lift up and down in the water. Rinse in several waters—the last slightly blueed for white, or stained with coffee for écaru. Put through the wringer; never wring by hand. Set up the stretcher, and after doubling your curtain to find the centre, commence to pin on from centre to outside. Keep the curtains constantly wet while pinning on, or they may tear. Four curtains may be pinned on at once, so keeping all pairs precisely the same size and shape for bay or double window. A little starch may be added to last rinsing water if desired. If the curtains are treated in this way they will last much longer and look better than with ordinary washing.

Sewing Machines.

In many homes the sewing machine is a much abused servant. It is allowed to become clogged with dust and to suffer from lack of proper oiling. It is allowed to stand before windows on damp days, often with the polished parts of the machine exposed to the dust. Use the best oil and oil the machine frequently.

If the machine is gummed with oil go over it with kerosene and let it stand a few minutes until the kerosene cuts the gummed oil, then wipe with a soft cloth devoid of lint. A

small brush with stiff bristles is excellent to use. It will dislodge the dirt, and a long-handled crochet needle is useful in cleaning the crevices, which are often filled with accumulated dust.

Good Advice About Work-Tables.

"Study to get your work-tables and sinks just the right height. They will, of course, differ, according to the height of the worker.

"Too high a table causes a constant strain upon the arms and shoulders. Too low a one causes stooping and a tired back.

"Being a medium tall person, my favorite table is thirty-two and one-half inches. On this I can roll out pastry and do similar work without stooping, and as a consequence get much less tired than when my work is lower down.

"About an inch lower is my favorite height for an ironing-board.

"A low stove is wearying if it must be used much every day. And a washing can be done much easier if a higher bench than common is used for the rubbing tub.

"The easiest way to discover the exact height best suited to yourself is to place blocks of wood on your ordinary table to support a board until you have found which is less fatiguing.

"Any woman who neglects to rectify this matter is extremely foolish if she values her own health, for many a woman is nervous and unhappy after a day in her kitchen without knowing the cause.

"And the causes are too frequently the table, ironing-stand, and cook-stove of her daily tasks."

For white spots on varnished wood use equal parts of boiled linseed oil and turpentine, mixed thoroughly; apply to the surface with a piece of flannel. Afterward polish the entire surface with chamois skin or a leather polisher; the spots will surely disappear. Spots disappear as if by magic with this treatment. The oil must be applied sparingly, while the scratch is still fresh, and it must be well rubbed in, then kept out of the dust for a time.

To remove mildew from delicate fabrics, rub lard on the stained parts of the fabric and lay it out in the sun all day, bringing in at night before any dew falls, and do not let it be rained on. Leave in the sun seven days then wash in the usual way and all stains will disappear. There will be no hole come in your goods by this method as when some acid is used.

Tie absorbent cotton around your sewing machine needle bar and foot just above the screws. This will absorb the oil, and the machine may be used immediately after oiling.

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SAVE MONEY

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Star Oil Gas Burner Co.,
Pasadena, Cal.



"One Ghirardelli saving plan—buy it by the 3-pound can."

Girls—

You'll want to have it taste just right, especially if it's for "him," so be careful of the directions: Make a paste, using a tablespoonful of

Ghirardelli's Ground Chocolate

—to a cup of boiling milk—stir for a moment—then serve this delightful beverage. Watch his eyes sparkle—note the satisfaction in every sip—hear him murmur "You're a dear."

But be sure it's Ghirardelli's.

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HERCULES

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The kind that is made for comfort and long wear.

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503 MARKET STREET

Our Young Folks

Ray's Callers.

By MARY DAVIS.

"I'm tired of staying on this old couch," said Ray, crossly. Little Robbie leaned over and stroked his hand. "I'm sorry you got hurt saving me," he said wistfully.

Ray smiled and squeezed his small brother's chubby fingers.

"I'm not sorry I got hurt, old fellow, but I wish somebody new would come to see me, somebody I've never seen before." Nine-year-old Dorothy, who was reading, suddenly got up and tiptoed out, beckoning to Robbie and Jack to come, too. There was much whispering and giggling outside the door, and Ray wiped his eyes to keep back the tears. It was so hard to be left out of everything.

Just then there was a loud knock at the door. "Come in," called Ray. A rosy little maiden in a big white apron and a ruffled cap made a low courtesy.

"Mistress Betty Alden, sir," she said. "I grieve to hear you are ill." Ray laughed. "You look fine, Dorothy," he said.

"Thou are but a stupid boy," said Mistress Betty, grandly. "Perhaps you would like a few sweets of my own making." She held out a plate of fudge, and then backed out, and made a fine courtesy as she closed the door. Ray munched his candy and waited for new visitors.

"Tat-a-tat-tat," Captain John Smith rapped his sword smartly against the door and marched in. The Captain was very short and fat, and his coat dragged on the floor. A gay feather was in his hat.

"I'm Captain John Smith," he growled.

"Sit down, Captain, and have some candy," said Ray. The Captain sat down, and took a large piece of fudge. "Have you any Indians with you, Captain?"

The Captain laughed until he was red in the face, and Mistress Betty Alden ran in and pulled him out of the room.

George Washington was the last to come. Strangely enough he wore the same long blue coat that Captain Smith had worn, and carried the same sword. "I am around calling on my wounded men," he said. "I heard that you were a very brave fellow, my man." Ray sent the hard red pillow flying at the general's head, and George Washington left in a great hurry.

Then Dorothy, Jack, and Robbie trooped in. "Did you have some callers?" said Dorothy.

"You were all splendid," said Ray, "and tomorrow I'm going to be Robinson Crusoe, and the couch will be my island, and"—

"I'll be the ship that takes Crusoe out to the supper table," said father, who had come in while Ray was talking.

"Hooray, hooray, hooray," shouted Mistress Betty Alden, Captain John Smith, and George Washington together.

A City Playhouse.

"This isn't any kind of a place to play," grumbled Betty.

"I know it," assented Grace. "And, if we want to play house, it always has to be in the same spot,—under this

old pine-tree or else over in the corner under the three apple trees."

Aunt Jane looked up from her embroidery. "So you think you haven't any place to play," she said slowly,— "a big green yard, a pine tree, three apple trees, and a corner. Of course that includes the right to walk on the grass and to cut switches from the apple trees, too."

Betty and Grace looked puzzled. "Why, 'course," they nodded wonderingly.

"Oh, don't look so astonished," continued Aunt Jane. "You know there are places where children are not allowed to walk on the grass, or break even so much as a twig from the trees. If they did, they would be arrested should a policeman happen to see them."

"Oh!" exclaimed Grace. "I think that's mean."

"So do I," chimed in Betty.

"No," said Aunt Jane, "it's all right. It has to be so, or there wouldn't be any parks left in the big cities. But those little children of the city find places to play in just the same and have good times. Do you want me to tell you about the three little children whom I saw one day having a perfectly fine time playing house in a New York City street?"

"Yes," cried Betty and Grace in chorus.

"Well," began Aunt Jane, "one afternoon I was walking up Broadway in New York, and I saw these children. There was a narrow space of bare dirt between the sidewalk and the street curb; oh, it was very, very narrow, indeed; but there it was that two little girls and a boy had made a play-house and were playing in it. The rooms were marked out with broken bits of jagged stone picked from the rubbish of a nearby building that was being put up. One little girl sat on a rock about as big as a small picture book, and she quite filled one of the rooms when she sat on her little block of stone.

"Then came a narrow passage way of stones where a little wee bit of a boy was picking his way along. The passage was just as wide as one of his feet, so he had to walk very carefully. At the end of the passage was still another room, and the little boy, when he reached it, sat down in it and called it his. They all three seemed to be having a beautiful time, and that is all those children had for a place to play or outdoor things to play with: Would you like to exchange your whole green yard, with a pine tree and three apple trees and a fence corner, for a little bare strip of dirt along the city street?"

"Wouldn't like it," said Grace earnestly.

"Not a bit," added Betty.

And they grumbled no more about their playground.—Emily Rose Burt,

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IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE

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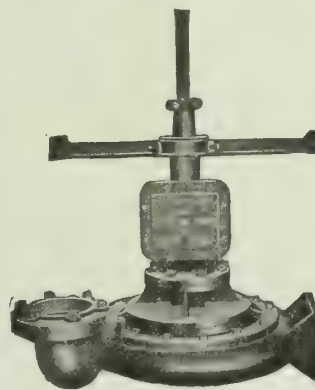
Irrigation pipe gets rough usage. It's always being moved about—thrown onto the ground, piled into a wagon, hauled here and dragged there. A riveted pipe can't stand the strain—the rivets soon work loose. Besides, they interfere with easy handling—the lengths don't slide smoothly because the rivet heads catch. Madewell Surface pipe is not riveted, but is

BOTH LOCK-SEAMED AND SOLDERED

The lock-seam is made under heavy pressure by our special machinery and is an extremely durable seam in itself. But we make doubly sure by soldering the entire length of the pipe. Madewell pipe can be crushed flat without breaking this indestructible soldered lock-seam.

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Surface Irrigation Pipe will save you big money on your pipe bills because the rivets and soldered seam greatly minimize the possibility of leakage.

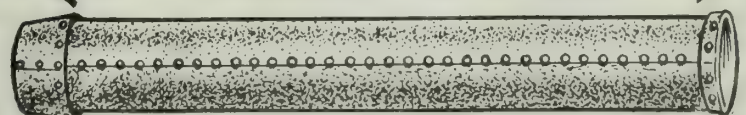
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WATER PIPE

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THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts.

San Francisco

THE MARKETS

San Francisco, March 4, 1914.

Cereals.

WHEAT.

Offerings in the local market have been pretty closely cleaned up, and with sellers in the north holding back, there is a firm feeling in regard to prices. There has not been much buying lately, but some advance is expected with a renewed demand.

California Club, ctl.	\$1.60	@1.62½
Forty-fold	1.62½	@1.65
Northern Club	1.60	@1.62½
Northern Bluestem	1.70	@1.75
Northern Red	1.60	@1.70

BARLEY.

Notwithstanding the good crop outlook, barley has recovered a little from its recent weakness. Speculative trading is light, but prices are on a higher level, and the spot market is in a little better shape, both as to prices and demand.

Brewing and Shipping.	Nominal
Choice Feed, per ctl.	\$1.10 @1.15
Common Feed	1.05 @1.10

OATS.

The demand has been very light for some time, and white oats are quoted a little lower. Offerings, however, are not much in excess of the demand.

Red Feed	\$1.50 @1.60
Seed	2.00 @2.10
Gray	Nominal
White	1.30 @1.35
Black Seed	Nominal

CORN.

Corn is rather easy in the East at the moment, but fluctuations there have little effect on the local market. The demand is limited, and no large supplies are coming in.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @1.82½
Eastern White	Nominal
Egyptian	1.75 @1.85
Milo Maize	1.75 @1.80

RYE.

Stocks are light, and values are held firmly at the former level, with some choice stock quoted higher.

Rye, per ctl.	\$1.45 @1.50
---------------	--------------

BEANS.

The only change this week is an advance in red kidneys. All other lines are firm, and local dealers look for a marked increase in demand both for local and shipping account within the next few weeks. The movement for the past week has been rather light, but supplies are comparatively small for this time of year, and there is little coming in from outside points. It is accordingly expected that the spring trade will bring some further advance in prices, and will cause a material depletion of stocks on the Coast. The situation in limas is stronger than for many years.

(On wharf.)

Bayos, per ctl.	\$5.40 @5.65
Blackeyes	4.40 @4.65
Cranberry Beans	4.00 @4.25
Horse Beans	1.90 @2.15
Small Whites	4.75 @5.00
Large Whites	3.60 @3.75
Limas	5.30 @5.40
Pea	3.20 @3.40
Pink	3.15 @3.40
Red Kidneys	5.40 @5.60
Mexican Red	4.50 @4.80

SEEDS.

Prices are unchanged, and trading in the more important lines is limited, both demand and supply being rather light.

Alfalfa	12½ @15 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb.	3½ c
Canary	7 @7½ c
Hemp	2½ @3 c
Millet	2½ @2½ c
Timothy	7½ @8 c
Yellow Mustard	Nominal

FLOUR.

No further change in prices is noted, but the market holds firm. Northern export trade has been falling off, but is expected to revive with a reduction of freight rates.

Cal. Family Extras	\$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

Arrivals have been considerably lighter for the last week than for some time previous, but the local demand is too light to cause any improvement in prices. The cessation of consignment shipping, however, has steadied the market a little, and dealers believe that present prices will be maintained for some time. The available supply is large, but holders are not much inclined to force the hay on the market at present values. The abundance of green feed has curtailed the demand for alfalfa, and at present prices many are inclined to hold their stock over until next season.

No. 1 Wheat, or Wheat and Oats	\$13.50 @14.50
do No. 2	11.00 @13.00
Lower grades	9.00 @11.00
Tame Oats	10.00 @13.00
Wild Oats	9.00 @12.00
Alfalfa	8.00 @11.00
Stock Hay	7.00 @9.00
Straw, per bale	65 @90c

FEEDSTUFFS.

Cocoonut meal has stiffened up sharply, and is \$2 per ton higher than for some weeks past. Other lines stand about as before, with little demand and a rather easy feeling in prices. Considerable rolled barley is being taken for chicken feed at present prices.

Alfalfa Meal, per ton	\$18.00 @19.00
Bran, per ton	24.00 @25.00
Oilcake Meal	34.00 @35.00
Cocoonut Cake or Meal	27.00 @28.00
Cracked Corn	41.00 @42.00
Middlings	33.00 @34.00
Rollod Barley	24.00 @24.50
Rollod Oats	29.50 @30.50
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

Arrivals of asparagus are increasing rapidly, though so far the prices realized have been fair. Ordinary offerings move at about 8 to 10c, with fancy stock higher, but lower prices will probably rule before the end of the week. Rhubarb is coming in more freely, with a downward tendency in values. Offerings of attractive peas are light, and choice stock brings an advance, though there have been many lots of poor stock held over, which tends to depress the market. Lettuce is again in very liberal supply, and the price has dropped sharply, while celery is held nearly up to last week's prices. Mushrooms have dropped again.

Cabbage, per ctl.	\$1.00 @1.25
Cauliflower, dozen	25 @50c
Green Peppers, lb.	6 @9c
Carrots, per sack	40 @50c
Green Peas, Southern, lb.	4 @10c
Tomatoes, Mexican, box	1.75 @2.25
Sprouts, lb.	5 @7c
Celery, large, crate	2.50 @3.25
Rhubarb, lb.	7 @9c
Lettuce, crate	75c @1.50
Mushrooms, lb.	8 @15c
Asparagus, lb.	7 @14c

POTATOES, ONIONS, ETC.

Arrivals of new potatoes are still irregular, but offerings find a ready market as quoted. No further change of importance is noted in other lines, arrivals of potatoes continuing fairly large without weakening the market, while onions remain scarce and high in all Coast markets.

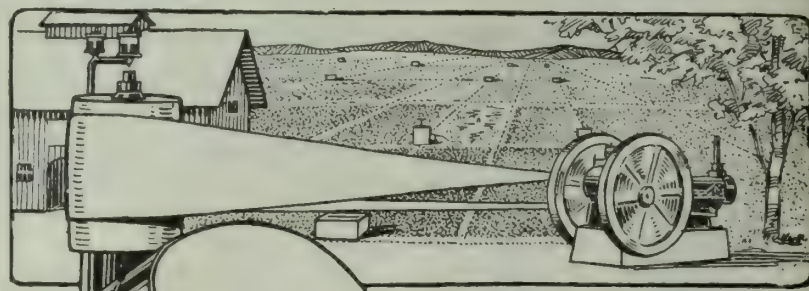
Potatoes:	
River Whites	75c @1.05
Sweet Potatoes, per ctl.	1.25 @1.60
Oregon Burbanks	1.00 @1.35
Onions: Oregon	3.25 @3.40
Australian	3.75 @4.00
Garlic, per lb.	7 @10c
New Potatoes, lb.	4 @5c

Dairy Produce.

POULTRY.

Eastern stock is coming in rather slowly, and with only moderate arrivals from nearby points and a large demand for choice young stock, nearly everything of this description shows an advance. All lines of hens and young roosters are held at 20 to 21c, and broilers sell up to 35c. Turkeys are easy, with liberal offerings and only a moderate demand.

Large Broilers	25 @30 c
----------------	----------



A Dependable Water Supply

Now Is The Time To Install Your Pumping Plant

DON'T be misguided and install a System that cannot meet your requirements. In order to get the greatest efficiency and satisfaction from your plant, you must install a System built to meet all the requirements of your particular well. Not only is—

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—noted for its simplicity and durability, but it is positively the most economical System in operation. Constructed according to the specifications of your well, this System eliminates your pumping troubles and produces the maximum capacity of your wells at the least cost.

Write today for free Catalog No. 25, which tells all about the Layne & Bowler System and the story of its hundreds of successful users.

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900-910 SANTA FE AVE., LOS ANGELES, CAL.

READ-MILLER CO.

SPRUCE BOXES LUMBER

FRUIT, CANNERY, BUTTER
AND ALL OTHER KINDS

PACIFIC BOX FACTORY

353 BEACH ST. SAN FRANCISCO, CALIF.
OPERATING OWN LOGGING CAMPS AND MILLS

Small Broilers, per lb.	30 @35 c
Fryers, per lb.	25 @27 c
Hens, extra, per lb.	20 @21 c
Hens, large, per lb.	20 @21 c
Small Hens, per lb.	20 @21 c
Young Roosters, per lb.	20 @21 c
Squabs, per doz.	\$2.00 @2.25
Geese, per pair	2.50 @3.50
Ducks, doz.	6.50 @8.00
Turkeys, live, per lb.	20 @21 c
do dressed, choice	23 @25 c

BUTTER.

Prices continue to decline gradually with increasing supplies, which are more than ample for the current demand, and no outlet of any importance in shipping channels. The drop for the week is about 3 cents.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras ...25 24½ 24 24 23 22
Firsts ...24 24 23 23 22½ 21½

EGGS.

Firsts are again quoted on the Exchange. Prices have been fluctuating within narrow limits, with supplies about balancing the demand. A large shipment of Chinese eggs is due at Seattle shortly, and a large part of the stock will come to this market.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras ...21 21 20½ 20½ 20½ 21
Firsts ...19½ 20 19½ 19½ 19½ 19½
Selected
Pullets...19 19 18 18 18 18½

CHEESE.

Offerings in some lines are larger, and fancy flats have dropped 2c, while 17c is about the average figure for Monterey cheese.

Fancy California Flats, per lb.	17 c
New Young Americas, fancy	20 c
Monterey Cheese	17 c

Deciduous Fruits.

Apples find a better demand than last week, and at the moment take precedence over other fruits. With diminishing stocks, fancy Newtown Pippins are held at an advance, other varieties standing as before.

Apples: Newtown Pippins	\$1.50 @2.25
Hoover	1.00 @1.50
Oregon Spitzenbergs	1.40 @2.25
Oregon Ben Davis	1.65 @1.85

Dried Fruits.

There has been little change in prices of late, and on practically every-

thing but peaches the quotations given are little more than nominal, as supplies in the country are cleaned up and there is no reliable standard by which to judge values. This is especially true of apricots, of which there is practically nothing left. While offers for spot peaches have not been advanced, the market seems to be working gradually into better shape, with increasing inquiries from various quarters. Eastern buyers are taking more interest and there is some indication that considerable business will be done in that section during the spring, while some good-sized sales for export are reported. Prunes show an upward tendency, with a fairly active jobbing movement and little stock remaining in either growers' or packers' hands. Raisins are closely held, and the Associated Company looks for a marked improvement in business. The disposition of outside packers to cut prices is disappearing, and there is more demand from the East, where stocks generally are said to be depleted. The New York Journal of Commerce says:

"Although inquiries from this end are comparatively few, advices received from the Coast reflect a stronger feeling among sellers of California prunes, due to the limited holdings, especially in the larger sizes of Santa Clara fruit. Some of the leading packers have raised their asking prices to 7c f.o.b. bulk basis for 40s, 50s and 60s, though it is believed to be still possible to buy these sizes at 6½c f.o.b. bulk basis, and outside fruit might be had at a quarter of a cent less. On the spot California prunes are going steadily into consumption on small orders and a firm feeling prevails. Oregon Italians are not offered for shipment from the Coast, so far as can be learned, and the stock held here is light, with the result that prices from store are held firmly up to the quotations.

"Peaches on the spot are getting more attention in a jobbing way, although this is not the season for consumption of that fruit here. The stronger reports coming from the Coast as a result of the active export demand, which comes chiefly from England, are reflected in the firmer feeling shown by local holders. Apricots are in limited supply everywhere, and, although the demand is light and on the hand-to-mouth order, the tone of the market is firm.

"Increased demand for California loose Muscatel raisins is noted, the East Side trade being particularly active. A firm feeling prevails, but prices show no quotable advance."

Evap. Apples, 1913 6½ @ 8 c
Apricots, 1913 10 @ 13 c
Figs: White Nominal
Black Nominal
Calimyrna 4½ c
Prunes, 4-size basis 5 @ 6 c
Peaches 4 c
Pears 6 @ 7 c
Raisins (in sweatbox):
Loose Muscatels 4 c
Thompson Seedless 4½ c
Seedless Sultanas 4½ c

Citrus Fruits.

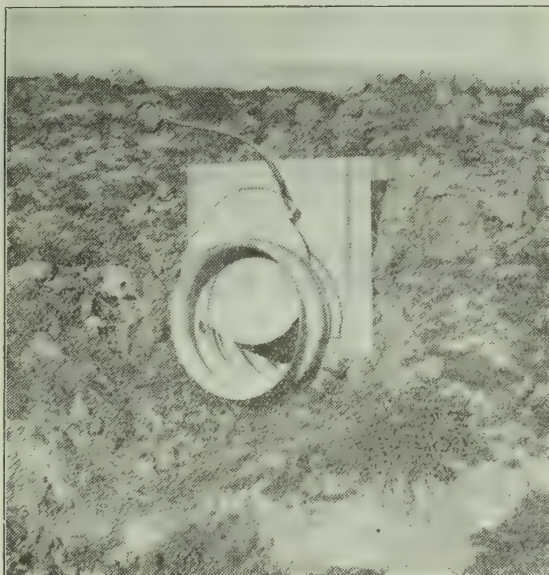
Oranges are rolling East from California at the rate of nearly 200 cars per day, while the cold weather which prevailed there last week caused fruit to sell at very low prices. It is hoped now that the storm has passed that the markets will revive and better prices obtain.

On the New York market last Monday, March 2nd, 14 cars of navels averaged from \$1.40 up to \$2.35 per box. Lemons, \$3.25. The other auction points showed no better than New York. On the Los Angeles auction last Monday, prices averaged from \$1.07 to \$1.30 per box, f.o.b. California, at which time 6 cars were sold.

Shipments of oranges for the season up to March 1st were 13,125 cars, as against 7,931 cars to same date last season.

In the San Francisco market fancy lemons have been marked up a trifle, but there is little stock that will bring the advance. Otherwise prices stand as before. Oranges have been arriving in large quantities this week, and so far buyers have not been taking much interest.

Oranges: Navels \$ 1.00 @ 2.50
Tangerines, crate 75c @ 1.25



Raw Photo of Gate, installed. Slide partly open.

is the most PRACTICAL, CONVENIENT and LASTING type ever devised for small outlets from the ditch.

They are so simple and easy of operation that their opening and closing may safely be left to a ten-year-old boy.

They are practically water-tight. No flooded and scalded areas below the outlet.

When it is necessary to clean and re-shape the ditches, or when for any other reason it is desired to remove the gates and pipes, it can be very readily accomplished, and with no loss of material.

These gates will pay for themselves in a short time through their superior convenience and effectiveness.

CALIFORNIA CORRUGATED CULVERT CO.

LOS ANGELES

WEST BERKELEY

Grapefruit, seedless 1.25 @ 2.50
Lemons 1.75 @ 3.50
Limes 5.50 @ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Owing to criticisms of the quality of the nuts last year, the southern walnut association is making efforts to raise the standard of the product for this year. There is not much left of the old crop, and business is fairly good for this time of year. There are no almonds left from the old crop, prices being entirely nominal.

Almonds:
Nonpareils 19 c
I X L 18½ c
Ne Plus Ultra 17½ c
Drakes 15½ c
Languedoc 15½ c
Hardshells 7 c
Walnuts, new crop:
No. 1 Softshell 16 c
No. 1 Hardshell 15½ c
Budded 19 c
No. 2 11½ c

HONEY.

While some of the southern producing districts have suffered from disease of the bees, the general outlook for production this spring is excellent, and a large crop is expected. The local trade is very quiet at present, but offerings are limited and values are steadily held.

Comb, white 15 @ 16 c
Amber 11 @ 12 c
Dark 9 @ 10 c
Extracted: White 8 @ 9 c
Amber 6½ @ 7 c
Off Grades 5 @ 6 c

BEESWAX.

There is no very urgent demand locally, but the supply is light and offerings can be disposed of at about the former prices.

Light 30 @ 31 c
Dark 28 @ 29 c

HOPS.

Little business has been done on the Coast lately, and the Eastern demand is said to be very light at the moment, while there has been some pressure to sell on the part of Oregon growers. Several good-sized contracts for this year's crop have been closed lately within the range quoted.

1913 crop 15 @ 17 c
1914 crop 14 @ 16 c

Live Stock.

The principal feature at present is the increased offerings of young lambs and calves, which are now coming in freely, though prices have not been

much affected. Other lines of stock remain unchanged. Some large shipments of feeders are being shipped in from Mexico, Arizona, etc.

Steers: No. 1 7¼ @ 7½ c
No. 2 7 @ 7¼ c
Cows and Heifers: No. 1 6¼ @ 6½ c
No. 2 5¾ @ 6 c
Bulls and Stags 2½ @ 5 c
Calves: Light 8¼ @ 8½ c
Medium 8 @ 8¼ c
Heavy 6½ @ 7½ c
Hogs: Grain-fed, heavy 7¾ @ 8 c
150 to 250 lbs. 8½ @ 8¾ c
100 to 150 lbs. 8¼ @ 8½ c
Prime Wethers 5½ @ 5¾ c
Ewes 4½ @ 5 c
Lambs 6½ @ 7 c
Milk Lambs 8 @ 8½ c

DRESSED MEATS.

Steers 12 @ 12½ c
Heifers 11½ @ 12 c
Veal, large 12 @ 13 c
Small 13½ @ 14½ c
Mutton: Wethers 11 @ 11½ c
Ewes 10 @ 10½ c
Suckling Lambs 13 @ 13½ c
Dressed Hogs 13½ @ 14 c

HIDES.

Everything in this line is firmly held, with no material increase in supplies, while the demand is picking up a little in some quarters.

Heavy Steers, over 56 lbs 15 c
Medium 14½ c
Light Steers, under 48 lbs 14½ c
Heavy Cows, over 50 lbs. 14½ c
Light Cows, 30 to 50 lbs. 13½ @ 14½ c
Kip 14½ @ 15½ c
Veal 17½ @ 18½ c
Calf 17½ @ 18½ c

Dry—
Dry Hides 25½ @ 26½ c
Dry Kip, 10 to 15 24½ @ 25½ c
Dry Veal, 5 to 10 29½ c
Dry Calf, 7 down 29½ c

Horse Hides—
Salt: Large \$2.75
Medium 2.25
Small 1.00

WOOL.

Buyers and sellers in the north have not yet been able to get together on prices, and there is no movement in California yet, as buyers are waiting until the shearing is well under way.

Northern mountain 7 @ 9 c
Southern mountain 7 @ 8 c
Defective 4 @ 6 c
Lambs 7 @ 10 c

HORSES.

The rather disappointing experience at the last large sale has shown that the local market is not yet in shape to receive large shipments, and offerings of heavy stock of the type usually

THE 4-C IRRIGATION GATE MADE FROM AMERICAN INGOT IRON

wanted for city use have been light for the last week or so. It is expected, however, that the demand will pick up materially in the near future, and there is already a much better inquiry from country buyers.

Heavy drafters, 1700 lbs. and over \$275 @ 325
Light Drafters, 1500 to 1650. 225 @ 250
Chunks, 1350 to 1500 200 @ 225
Wagon Horses, 1250 to 1350. 150 @ 200
Delivery Horses, 1050 to 1250 100 @ 125
Desirable Farm Mares 75 @ 100

MULES.

1200 lbs. \$200 @ 250
1100 lbs. 150 @ 200
1000 lbs. 125 @ 175
900 lbs. 75 @ 125

PUBLISHER'S DEPARTMENT.

NEW BRANCH OFFICE.

Last week a branch business office for the PACIFIC RURAL PRESS was opened at Los Angeles for the convenience of Southern California advertisers. The new office is located at 239 South Los Angeles street, and will be in charge of F. A. Tutt, a man well known to most of our advertisers in the south. Business for this paper has been growing very rapidly of late, and from the south particularly fast. In order to handle what we have and to reach out for more, as well as to endeavor to give a better paper, our facilities must be expanded. We ask for Mr. Tutt the same kind consideration be accorded that has been given us in the past.

The fine weather of the past two weeks and the good crop prospect has had the effect of producing many new subscribers to the RURAL PRESS. Last week was the best so far this year in the number of additions to our list. We are working for a big increase this year, and if our friends will each help a little the office force will appreciate it.

This week we devote considerable space to the draft horse in California. We believe our readers will be interested in the various articles as well as the pictures of good types of draft horses. Cheap feed means that horses will be more profitable to their owners.

The steamer Highland Harris, which arrived at New York February 18 from Argentine ports, brought 2550 tons of chilled beef. This is said to be the largest shipment of beef ever brought to that port.



Salvador Stock Farm

Headquarters for Shires

Now is the time to buy, and Napa is the place to buy, for the horses are right and the prices are right. I have never sold an imported stallion which has not made good. I have no salesmen, but rely upon the quality of my stock and fair dealing to sell my horses.

Having lived at Napa for twenty years, and my property being in this State, I am always to be found and found ready to make good my guarantees. Why buy from dealers who may be gone from the State before next season?

HOWARD CATTLE CO.,
San Francisco.

ALBERT J. DIBBLEE,
San Francisco.

POTTER HUFFMAN
LAND CO., Alturas.

ROBERT ORR,
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ENOS GARCIA,
Hollister.

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Salinas.

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Hollister.

E. W. WESTGATE,
Rio Vista.

MCCORMICK BROS.,
Rio Vista.

GEO. WINGFIELD,
Nevada.

DEAN ESTATE,
Nevada.

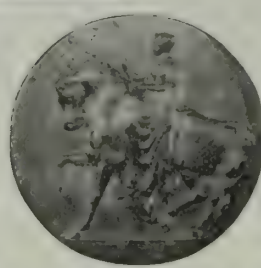
CREPS BROS.,
Wheatland.

KERN LAND CO.,
Bakersfield.

JACK LONDON,
Glen Ellen.



A Satisfied Customer is the
Very Best
Advertisement.



Above is a List
of a Few of
my Satisfied
Customers.

Medal of Shire Horse Society of England and Cup of Shire Horse Society of America, Won Three Times by Henry Wheatley.

I HAVE FOR SALE Stallions from 2 to 5 years old, all with State license
Mares from weanlings to 5 years old—the older ones all in foal.

Prices very reasonable. Visitors always welcome, and will be met in Napa by appointment.

HENRY WHEATLEY, Napa, California

THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 11.

SAN FRANCISCO, SATURDAY, MARCH 14, 1914.

Forty-Fourth Year 7-1-14

Handling Cherries in Santa Clara Valley.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Walking through a Santa Clara cherry orchard of 800 trees, pointing out here and there a splendid tree two feet in diameter that far above ground, speaking of trees in favored locations which bore over a ton of fruit each, but remarking that "Any tree will bear 150 to 200 pounds which will sell for at least five cents a pound," and "Trees near my place forty-seven years old are bearing prodigiously with no signs of a let-up," W. C. Carlon recently showed that cherries are very profitable in various parts of Santa Clara county if handled right.

Cherries Need Water.—"The trouble with those who don't make money on cherries is that they simply won't give the trees proper care, principally in the matter of irrigation, and do not insist on a good pack of the fruit."

Last year Mr. Carlon spent \$365 irrigating the thirteen acres of cherries, apricots, and prunes, besides doing all the work himself except the pumping, which cost \$1.10 per hour for a 40-horsepower engine hired for the purpose to lift the water about a hundred feet. He plows three furrows between each row and then crosswise, to put each tree in the center of a diked check, in which the water is allowed to stand four to seven hours for a thorough soaking, late in February, and again right after the fruit is picked. This spring is the first for three years that Los Gatos creek has furnished plenty of water, so the cost was considerably reduced; but water will have to be pumped for the summer irrigation. The creek water

All of the standard varieties grown largely in the State Library, the Royal Anne, Black Republican, Black Tartarian, and others, need to be opened in the center to sunlight, and the Royal Annes need trimming from the under side. Too severe pruning would have shocked the trees too greatly, and would have caused them to spend their energies on repair and sucker growth rather than on fruit. As it is, the trees are filled with stubs several inches across. The new bark, even on those cut off last winter, is already showing the old bark away from the stubs and will soon be starting to cover the ends. Where limbs were sawed off last summer, there is already a goodly band of new green bark starting from the edges and working over



Cherries as Low Standards in a San Jose Dooryard.



Young Cherry Orchard in Santa Clara County.

costs \$.75 per hour for 100 inches.

Pruning Desirable.—Twenty-five feet apart seems to be satisfactory for the trees, but, contrary to the usual custom, Mr. Carlon prunes thoroughly. This orchard, all the trees of which are over twenty-four years old, has not had water enough in past years to make it produce heavy crops, which accounts partly for the large size of the trunks and tops. The tops were pretty well filled with wood, so that twenty-six cords of stove-wood were cut out of the 800 trees this winter, and another severe pruning will follow fruit-picking.

the ends of the stubs.

Normal growth of the tips of these cherries seems to be only a few inches annually, but where suckers start low down on a limb, they rob the limb of sap and often kill it, especially in prunes. For this reason, suckers should be taken out.

Basin Heading Is Bad.—Many of the trees on this place have great basins where the eight or ten main branches come to the head. These basins are filled with gum, wet leaves and dirt, which are a menace to the long life of the tree. Earl Morris, county horticultural commissioner, says: "Never head a tree so that several main branches come out close together. Try to get them one higher than another and partly around the trunk from the next lower."

Remedying Uncertain Bearing.—A considerable fault of cherries is that they are uncertain bearers. But growers are learning that alternation of varieties and giving plenty of air and sunshine overcome this trouble. Black Republicans in one orchard showed marked effects of the

Royal Annes in the first row, but gradually decreased until the fourth row from the white cherries showed no benefit. Mr. Carlon noticed, also, that where a tree has been taken out, the sides of the trees surrounding the open space are quite sure to bear a heavy crop, even though the orchard does not.

Fertilizers, Frost, and Cultivation.—Mr. Carlon's lack of faith in fertilizer for cherries is based on the philosophy that a growing tree is always working in new ground, but he forgets that fertilizer may be needed to keep it growing and healthy, or that new ground in

(Continued on Page 326.)

Pacific Rural Press

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LOS ANGELES OFFICE, 239 South Los Angeles Street

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS CO., - PUBLISHERS

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Mar. 10, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.02	28.81	34.01	60	42
Red Bluff	.00	29.67	18.90	78	46
Sacramento	.00	18.05	14.95	74	48
S. Francisco	.00	26.88	17.65	74	48
San Jose	.00	17.48	12.86	84	38
Fresno	.00	9.97	7.02	80	44
Independ'ce	.00	11.44	6.87	72	30
San L. Obispo	.00	29.00	15.32	84	46
Los Angeles	.00	22.08	12.05	88	50
San Diego	.00	8.54	7.77	88	52

The Week.

So many readers are writing us that their horses have gone off their feed since our last issue that we are forced to the conclusion that our indulgence in sentimentality about horses and girls was offensive to good horse sense. We are perfectly aware that it is not considered professional among horses to talk to each other about what they see when they turn their heads to peer into the hood of the buggy which they are pulling so slowly through the forest avenues, but we did not think that they might object so seriously to having it all come out in print. Of course, there is very forcible circumstantial evidence that the horse must have talked about it, for there was no one else there to see, and, under such suspicion, there is a danger that those who wish to do skylarking on wheels may have to take inanimate tractors. It all comes out very clearly as you think about it. By endeavoring to uplift the horse through an appeal to the grandfathers to remember his companionship in the most entrancing affairs of their lives, we may alarm the foxy youth by the thought that horses' eyes are large, their ears alert, and their tongues long. And so we have, possibly, harmed rather than helped this noble animal in his effort to regain his old ascendancy in human society—filling him with heart-sickness which is at enmity with appetite. In contrition we now forswear sentiment in these writings. If any reader can detect a single slip of it in this week's performance, he can get his money back by application at the box office.

A California Girl Shall Plow If She Wishes.

There is a teapot tempest in the Santa Clara valley because a reform angel flitted over an orchard and saw a girl, properly booted and skirted no doubt, guiding a plow and making a good turn of mellow loam beneath the witch-

ery of the fruit blossoms. Instead of admiring the picture as she should, the winged observer though she discerned in it an instance of parental slavery, and alarmed the public accordingly. To our mind there is but one question involved in this fermentation which has been stirred up, and that is: what is the attitude of the girl toward the work, and what is her desire as to her pursuit of it? According to the common prints, she has defined that matter in these words: "that she was plowing in the orchard of her own volition and felt sure that the work was no more difficult than basketball." If this is a true statement of her judgment and desire, no association has any right to interfere with her pursuit of this desire on her own premises. Californians have taken ground that a woman shall have free exercise of all her public rights as a citizen, and this would be mockery if it did not also make woman more secure in the possession of her natural rights. The right to work is both a natural and a constitutional right, which is in considerable danger of being contravened by tender-hearted and soft-headed people. When we free woman from conventions by recognizing her right to vote, it should mean that she is freed from certain conventions as to woman's work. Probably if this girl had been painfully struggling with tubs of water or carrying a hundredweight of wet clothes to the clothesline, neither the walking delegate nor the doctor of the humane association would have taken fright; but because a "pretty, robust girl of sixteen" chooses to throw the lines around her shoulders and hold the plow handles while the horse, or team, walks leisurely through the perfume of the fruit blossoms, these censors of the public conscience turn their thumbs down upon her parents. And in saying this we do not mean to say that we favor field work for women—except as they choose it and prefer it to other, more conventionally feminine activity. It is what they think of it, not what we think and not what the humane association thinks: we only insist that as California has made women free, they shall be free in all honorable endeavor. There are cases in which a man has been justly prosecuted in this country for yoking up a woman and a cow to a plow as they sometimes do in Europe. That is an entirely different matter, and we shall be lucky if we do not see that in California, with the throngs of immigrants which threaten us. But if a California woman wishes to hold a plow, she shall do it. It may give her greater efficiency with a broomstick in her own defense against Mrs. Grundy.

Plow-women Not Dangerous.

As a matter of fact, California has little to fear from plow-women. We have had in the past, and still have, a good many women who by their judgment of work and by the actual doing of it, by their correct use of capital in economic production, and by their wise indulgence in progressive methods, have demonstrated their agricultural quality. We believe they are subject to the same rule as men, viz: that the best appreciation of the requirements of work is to be had from doing it. They must be trusted, just as men are, to discern quickly what is within their physical reach and what they had better buy muscle for. This knowledge is to be secured by experience, and not through conventionality. In fact, if women, either as laborers for themselves and as em-

ployers of labor, are to be governed by conventionality, they will be handicapped as men are not, and will therefore have reduced chance of success in their vocations. Such losses as have come to our women in horticulture are generally due to amateurish operations which do not include knowledge enough of the work which has to be done and economic appreciation enough to exclude plunging. Neither of these are likely to be attained without defying some of the conventionalities. A woman who can hand out a good line of deep-throated profanity can straighten out a string of mules which frantic screaming would only more hopelessly entangle. Of course, she need not swear: she can give them a line or two of Homer with the proper inflections, and it will do as well. It is all Greek to the mules, anyway, but there is a note of mastery in it which they recognize, and it comes from experience both in the woman and the mule. Now we imagine if that angel of conventionality had hovered over the San Jose plow-girl long enough, there might have been another great social offense alleged against her. There would have really been no immorality in it, and yet we admit the suggestion is shocking and we should not make it. Still we get so out of patience when we hear one group of women prescribing farming for girls and another group declaring they shall not do what is essential to a practical knowledge of farming, that we become ourselves immoderate and disrespectful. If women wish to do farming, let them go to it like a man: there is no other way to success in what is at the same time the most arduous, most exacting, and most delightful of all occupations.

In the World's Swim.

Of course, we are not going to object to the removal of protection from farm products. We paired-off with a Missouri subscriber on that subject several months ago and it would be disgraceful to throw a negative vote in his absence. But there is nothing in the contract to prevent us from expressing joy and appreciation at the way the thing is working. Of course, South American cattle and dead meat are rushing into New York—as much in a month as in a year formerly—but that does not matter, for, according to Mr. Jastro, they cannot have many left: unless that anti-veal law is working down that way. But we are rather used to this stream of foreign meats, even if it is all stuff which we should be growing ourselves. It does, however, give us rather a new sensation to read in the Chicago reports that "the trade is of the opinion that imports of corn from Argentine will be light for the next few weeks, and that the market will call upon Chicago for supplies." Is not that fine? The American corn crop thanking the Lord that it can live because the importers are taking a rest! And then, nearer home, how sweet is the assurance that owing to the "rapid strides now being made in the development of irrigated lands in Australia, it will only be a matter of a year or so until the farmers of that continent will be able to produce and ship butter to the San Francisco market throughout the entire year should there be a call for it." What, in the name of California irrigation, cows and alfalfa, is there to be glad about in the fact that Australians can send us butter all the year around! But then we are in the world's swim all right, everybody paying tribute to ship-owners to float in products which we should

make for ourselves for our own country's up-building. Why not give all these produce ships free tolls at Panama? It seems too bad to oppress them in the beneficent work of pauperizing American producers.

Competition With Subsidized Farmers.

And there is another thing which may be delightful from the new American point of view. The Australian states, and perhaps other new countries which are anxious to get a draw upon the American appetite, are in a way subsidizing settlers and offering them the inducement of production for open America markets. Dr. Ellwood Mead, who recently arrived in recognition of the invitation to him to take up an important line of rural industry work in the University of California, is reported by an interviewer to have said this: "The vast irrigated areas in Australia are rapidly becoming settled under the new governmental policy of resuming and dividing into small tracts the large estates, the private exploitation of which formerly retarded the country's progress. These tracts are being sold to settlers on a long-time basis and at terms which are attractive to persons of small means who wish to enter into agricultural pursuits. The settlers taking up land in Australia are, as a rule, English-speaking people, and come principally from Great Britain and North America. Dutch and Danish colonies are being organized by the Australian government, however, and it is expected that a large number of these people will flock into the country." This enterprising work is, of course, legitimate and praiseworthy from an Australian point of view, but how can an American forget that shipment of food products to American ports is in their outlook? Thus Australia and California are both in the world's swim, and so are the swordfish and the dolphin, and it does not take much of a prophet to tell whose economic gore will stain the waves. Coming ashore, it is just as plain to see that, with the degree of free entry of products which now exists, our farmers will stand small chance in competition with the subsidized producers of Australia. But it builds up the world, all right: pardon us if we rejoice: ha!

Compensation in Trade.

And what do we get in return for opening American mouths for Australian food when we have producing capacity to feed our own people for a century perhaps, and when our development depends upon the prosperity of such production? Well, Dr. Mead says, according to the same interviewer, these things: "Owing to the similarity of conditions in Australia and this State, California-made agricultural implements are finding great favor and a large business is being done in their importation. General trade with the United States has greatly increased during the past five years, and all sorts of American products are now in demand in the Antipodes. Fully one-half of the automobiles used in Australia are of American make, one firm alone importing more than 500 cars annually."

Dr. Mead did not say any of these things in argument. He simply stated joyful facts of world wide interest; we are putting in all the controversy ourselves and he should not be blamed for it. But in return for the food products which Australia will have in such abun-

dance for us, what shall we get? We can make farm machinery for them and automobiles for them—which may be fortunate because the American farmer will have to get along with a broken plow and do his joy-riding on a lame mule. And then if the present arrangement does not enrich Australia fast enough they can put an export duty on the products which they subsidize and make American consumers pay back the subsidy. It will work all right if they do not get too greedy and break their own game. Things are going their way.

The New Line of Special Privilege.

American farmers are an upstanding, independent people. They are on record as opposed to special privilege. They do not want it for themselves nor do they wish to have it handed over to others. They are able to feed Americans and to feed others who desire to be fed and perhaps must be fed from across the seas. But to set up a condition which brings the American farmer into competition with producers who are subsidized or who live below American standards of living is to open a new line of special privilege against the American farmer which, so far as now worked out, seems to make hardship for him without helping the consumer of anything.

Queries and Replies.

Querists must submit full names and addresses.

Budding Citrus Fruits.

To the Editor: I read your book on "California Fruits" and see a good many formulas for grafting wax, but don't see how to prepare "budding cloth" or wax cloth to tie with on old orange and lemon trees when budding. Please, what is the best composition for budding cloth, and the best way to make it, so that it will not melt in the hot sun nor crack in a cold morning, but stay elastic, stick well, but not keep wet, nor stick too badly to the fingers, nor turn or melt and turn the buds sour? I see a recipe for liquid grafting wax—will that do for the cloth? Is it better to cut the bud wood from citrus trees in the spring before the sap commences to flow too strong, or is it just as good after the blossom season? Do they grow better if cut before blossom? If so, can they be cave in, in moist sand, to be used later on old citrus trees? Do they grow easier that way, or is it better to cut them just before using them?—P. N. H., Fillmore.

You overlooked the paragraph on "waxed bands" which follows the wax recipes on the same page of the book. Waxed bands for budding or grafting are made from the grafting waxes which do not contain alcohol, because the alcohol evaporates, leaving the residue very hard. This serves very well where the wax is directly applied, but in making a cloth which you desire to remain plastic for some time, a wax made according to one of the recipes using tallow, beeswax and resin is superior. This wax can be painted hot upon cloth, which is afterward torn up into narrow strips and made into little rolls to postpone drying out. This will be elastic and adhesive.

For spring budding, scions of oranges and lemons can be cut some time in advance if kept in damp but not wet sand in a cool place. It is well to have the stock rather more advanced than the scion, therefore cutting in advance and inserting the bud later gives the stock an advantage in activity, and the result may be more satisfactory. However, you will get good

results either with fresh buds or with buds which have been properly kept for some time. Both methods are used by propagators. But, of course, if you are budding in summer to remain dormant until the spring growth starts, you cut the scions just before using.

Growing Orange Seedlings.

To the Editor: We want to plant some orange seeds in boxes in a lath house. Will they do to bud this summer, and what time if planted now? What fertilizer would be good to force them along? Would the bud make any growth this year? Will they do better in a lath house with plenty of water and fertilizer, or in open ground with or without same? Our open ground shows no water on the surface, but dig a trench 1 foot deep and it nearly fills with water. Would they do on such land if the water goes away in May?—L. S., Sonoma.

Although it is possible to grow orange seedlings in boxes in a lath house, it is more common to sow the seed in the ground under the lath covering rather than in boxes. If planted now, they may be ready for dormant budding in August if a good growth is secured. If the ground is a good rich, sandy loam, all that is needed would be a little nitrate of soda very carefully used, for too much is not only too stimulating but directly destructive to the plants. The buds would not start growth until next spring, and you will have to get one year's good growth on the top for a satisfactory salable tree. The land which you mention might be all right, but there is danger that land holding water so late and so near the surface may be cold. A good thrifty growth of orange seedlings depends upon a good amount of heat and upon adequate moisture, but not excessive moisture.

Lemons and Apricots?

To the Editor: I have an apricot orchard, 15 years old, the trees being planted 30 feet apart. A great many trees have been damaged or killed by gophers as the result of neglect by former owners. The soil is river-bottom land—sandy loam; irrigation in normal years is available. The land is practically in the frostless belt, and the 45 lemon trees which were planted about two years ago do well. I thought of planting more citrus fruit trees between the rows of the apricots in order to have a bearing crop when the apricot trees may cease bearing.—M. T., Saratoga.

If your apricot trees have grown as they do in good situations, they would be almost meeting at fifteen years old, and it is not expected that the young trees of any kind could establish themselves well under their prior occupation of the sky and land. The lemon is pretty good at serving itself, and if it gets water enough can be brought along for a time by cutting back the apricots to give it light. Unless, however, the apricots are profitable enough to keep, we should be inclined to clear them out for the sake of giving the land to lemons; or if they are worth keeping, make the lemon plantation on other land outside of the apricot area.

Planting Willow Posts for Growth.

To the Editor: Will you please tell me the best time of the year to plant willow posts in order to have them grow?—W., San Francisco.

Towards the end of the dormant period as the ground is becoming warm and still has plenty of moisture. We count it the best time now.

Prune Profits in the Sacramento

[Written for the PACIFIC RURAL PRESS.]

Although the amount of prunes produced in the Sacramento valley is very small as compared with those of the coast valleys, the time is coming, provided prices justify it, when this section will become one of the leading prune producing districts of the world. This belief is justified by the performance of prune orchards there, those around Woodland being used for illustration, owing to especially favorable conditions. There are, however, great areas where very similar conditions of soil and climate are found from Stockton north and no one locality is especially favored.

The central valley has not been considered entirely satisfactory for prunes as a rule, though the quality from some places is frequently unsurpassed. The coast counties generally give the best quality of fruit, evidently on account of milder temperatures and greater humidity in summer and the peculiar condition exists that while most other fruits ripen quicker in the central than in coast valleys, prunes ripen quite a bit later. As a rule the difference in quality and ripening peculiarities is more marked as the summer temperatures are higher and as the humidity is less. Thus where the climate is rather modified by the ocean winds entering the Straits of Carquinez, the quality is improved, so other things being equal the prune quality is better in the lower half of the Sacramento valley than in the northern end, and better on the floor of the valley where moisture is plentiful than at the hotter dried foothills. In fact moisture (and soil) is the ruling factor in quality and production.

THE REASON WHY.—The greatest reason for prune progress is the deep, rich soil that gives large yields and large sizes, while moisture gives fleshiness to the fruit and assures an excellent quality.

Large yields are pleasant, large sizes make them especially profitable and it is a rich, strong soil that is needed for both quantity and size of fruit. For example, in well tended orchards the sizes run probably 60's with a normal crop and that means a cent more than basis price. They also produce uniformly from year to year, which counts up. On the Yolanda orchard, owned by Horticultural Commissioner G. H. Hecke for example, 60 acres of prunes produced during the last three years 185 tons, 300 tons and about 180 tons respectively. A normal crop is considered 150 tons, which is about three times the average of the State, perhaps more. There are only three other large plantings in the Woodland district and their performance indicates that the named yields are only normal for conditions.

The best yields and the best sizes accompany the best of care. Irrigation can be practiced from either ditch or pumping plants, making frosts or continued rains during blossoming the only hindrances to even bearing. Always late blooms give some crop. As far as frosts go, this was a bad year for them and it can be seen what the yield of the orchard named is.

The reason for the good yields and sizes is essentially the nature of the soil. The whole stretch, five miles wide from a few miles north of Davis to Knights Ferry, 15 miles north, is either clay loam, silt clay loam, and of somewhat similar type. To the

casual observer the soil all over it appears about the same and to be a loam rather heavier than medium. It is uniform, very deep and very productive, showing as little loss in fertility from the long decades of grain farming as any soil in the State. These soil conditions are quite typical of large parts of the Sacramento valley.

It can be seen that there is enough fine soil for a wonderfully large prune production, even with the large amount of alfalfa, almonds and other crops that will be raised. Peaches will do on such soil, but it is a better prune than peach soil and prunes are more profitable, so the fruits named will probably be the leading varieties.

CULTURE AND ADVANTAGES.—Prune production is simple in this part of Yolo county. The orchards produce uniformly and there is water available to keep them in good condition whether rains come or not. The peach root borer does not bother and there are no thrips to make necessary disagreeable and expensive spraying, with some loss in quality under all conditions. These insects may be introduced, but again they may not. The main insects to bother are the apricot scale, which is so rarely found that it does not require attention, and the red spider which is not an insect at all. This latter can be easily and cheaply subdued by sulphuring. In other words, aside from the few minor tree troubles that can be expected anywhere the trees have nothing to prevent vigorous growth and bearing.

In years where the prune market is dull the price is a little below that for Santa Clara prunes, but in good years, like this, it is the same. From the Yolanda orchard the prunes in the bins this year were of wonderfully even size and quality. In this orchard, which will typify conditions in the district as they can easily be, the trees are put 27½ feet apart and so have plenty of light and room for spread and the branches are much more horizontal than in the usual orchard. Instead of using wooden props, the branches are tied together with wires, though a few props are also used when the crops are large. This work costs about \$4 per acre per year. It is necessary on account of occasional heavy north winds which would twist a heavily loaded limb around and break a tree badly if no protection were given. It is more effectual than wooden props and less expensive.

The picking begins about September 1 and winds up about the first week in October, or say, six weeks altogether. Four pickings or so are made, no shaking being permitted until the last one, when only a few prunes need to be knocked off. That usually means almost no slabs and a fine uniform quality.

On account of the late picking and the possibility of rains, every large prune grower has facilities for artificially drying his prunes if occasion demands, as they will soon grow whiskers and be ruined if rains come and they have to be stacked. The driers rarely have to be used and even without them the loss would be small, but they are considered kind of an insurance.

If one asks why with such excellent results the acreage has not increased enormously, the answer will have to

be that there are lots of unutilized opportunities running loose around California. The land has been held in fairly large holdings, it has been grain farmed and given good profits. Fruit production is a small man's business except as an occasional person grasps the opportunity of going into it on a large scale. Grain growers seldom go into fruit, especially when they have all the work they can attend to and good profits. It takes subdivision of land and new blood to develop a country and such conditions

are now arising through the interior valley.

Prune growing is inexpensive and slight calculation will show the profits where a man knows his business and attends to it. It is only a question of time before the Sacramento valley is cut up almost entirely into small farms. Alfalfa and stock will be the leading industry without doubt, but prunes, almonds, peaches and other fruit will be grown extensively also, making an ideally diversified farming condition.

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Pruning Olives and Oranges

[Written for the PACIFIC RURAL PRESS by A. A. JENKINS of Porterville.]

I have had a lot of experience in pruning olive trees, both old and young, large and small, and find the crop is greatly increased both in quantity and quality by proper pruning and preventing the accumulation of a superabundance of wood. But I would not advise trusting to a novice in attending to this class of work, as I find much damage caused by ignorance as to the fundamental principles of pruning, to say nothing of improper methods. I have even found trees where limbs have been purposely broken off, that the fruit might be more easily gathered, and broken stubs left to decay and seriously damage the tree.

I have noticed that olive trees will thrive and pay good dividends with much less care than citrus trees, and do well on lighter soils and with practically no cultivation, and very little applied moisture, but I do not advise the neglect of any tree raised for profit; I merely mention this as coming under my observation. The more intelligent care, the better returns from any and all trees, is my experience.

I will mention one ranch where I have pruned olive trees that had been maintained at a loss, not paying for their keep, viz.: the Dry Bog Orange Co. of Strathmore. This property has border rows consisting of olives, loquats and pomegranates, all of which were sadly in need of pruning. During the winter of 1912-1913 I removed as much as one-third, and in some cases one-half, the wood and by so doing obtained a wonderful increase in fruit.

In 1912 these olive trees produced a crop that brought \$41, and in 1913 this was increased to \$411, and the fruit commanded the very highest price. In conclusion, I would advise proper pruning for olive, as well as for any and all trees maintained for profit.

REVERTED WOOD IN THE ORANGE.—While in Bakersfield recently looking after some orchards on which I was called to give an opinion, and also to afford relief for trees that had "reverted" to such extent that fruit contained seeds, and the owners had almost given up in despair.

I was sent to above place by Prof. Coit, as my experience has been considerable, especially with reverted or retrograded trees, and have been very successful in treating them. Your article treating on this matter in the PACIFIC RURAL PRESS of January 17 was very timely. My method has been (as you advise) to remove all "wild" growth from trees. I will mention one tree in particular, the photograph of which is now in possession of Prof. Coit. This tree is 24 years old. It had borne scarcely any fruit for four years, and what little was produced was utterly worthless. In the winter of 1911-12 we removed at least two-thirds of the wood, being very careful to take out all branches showing signs of retrogression. In 1912 this tree showed a decided improvement both in the putting out of new fruit wood, with a fair crop of fruit which showed a very marked improvement in quality. The past season, 1913, there was gathered from above tree 700 pounds of fruit of uniform size and excellent quality, with not more than a half dozen fruits that failed to pack as "fancy." I mention this tree as posi-

tive proof that your article struck the right chord, and I can heartily recommend your advice to all citrus growers. I mention "all growers," as I find very few orchards, especially those neglected in the matter of pruning, but what show signs of wild growth, or "sports." This class of work should never be attempted by a novice or inexperienced help—or more harm than good might result.

BEST WAY TO PLANT PALMS.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Hard luck in transplanting palm trees is often caused by setting them too deep. Sometimes such trees live, but do not grow. Those which have a bowl-like base, Washingtonia and Phoenix, should be planted as Mr. H. E. Butler of Penryn, Cal., has done with large numbers and practically no losses, while with others, set nearby, at the same time, as many as 75% were lost.

Dig a hole considerably larger than the base of the palm. Break up the lumps and mix the dirt with manure, or complete fertilizer and old leaves, fine grass, etc., for humus. Fill the hole with the mixture, pack it down, then dig out enough dirt in such a way as to leave a cone, in the center of the hole, with its point level with the ground, and flattened for the palm to rest on. Then spread the roots evenly over the sides of the cone and pack the rich fine earth over them.

The packing is important, to prevent the plant from settling with the dirt if unpacked. The palm cannot thrive if any part except its roots is underground.

RESIDENT BACTERIA IN CALIFORNIA SOILS.

To the Editor: Will you inform me if the nitrogen-producing bacilli of the bur clover will live and work on alfalfa? Would a soil solution containing tubercular roots of bur clover be a satisfactory means of "inoculating" alfalfa seed.—FREDERIC L. GREENE, Modesto.

[It is thought that the reason alfalfa succeeds so generally in California is that the widespread bur clover has loaded the soil with the proper bacteria. The earlier view that different legumes required different bacteria for each of them is losing force in the face of recent investigations. Whether you need to use bur clover soil solution is doubtful. It is probable that the bacteria are already installed in most California soils.—EDITOR.]

STARTING ACACIA SEED.

To the Editor: My son has gathered considerable seed of the different acacias and desires to be informed on the proper time and manner of planting the seed, and the care and cultivation of the plants during the growing season.—J. J. B., San Jose.

[Acacia seed has a hard shell and the germ has to be helped out. It is now the time to go at the work. Pour boiling water on the seed and let it stand till cool. Then sow in sandy loam in seed boxes or in the open ground, partly shaded from too much sun at first by a brush or lath cover. Cover the seed lightly and keep the soil moist, but not wet.—EDITOR.]

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Handling Cherries in Santa Clara Valley.

(Continued from Page 321.)

many places is not available or not good, or the roots may be diseased and need stimulant to throw off the disease. The bedrock foundation of Placer county is an example, or the hardpan of other sections. Mr. Carlon's soil is over 30 feet deep, rich, loose loam, ideal for cherries.

Frost has caught many of the fruit-growers of the valley of late years, and some are putting in frost-fighting apparatus.

Cultivation begins in March as soon as the ground is dry enough. Vetch or grain should be sown directly after the irrigation following the fruit picking to protect the ground and the humus from the hot sun. It has a good cover crop to turn under and protects hilly soils from washings.

There is a time in the growth of cherries as with other fruits, when the cherries are just the color of the leaves and can scarcely be seen. Many people sell their orchards at this time thinking there will be a short crop, when in a few days a changed color shows a heavy crop. Likewise, shortly before they ripen, they seem to take a new start and swell rapidly to a good increased size. Irrigation at this time will not cause splitting as it would just before or shortly after; nevertheless it would fill the cherries with water which dilutes the quality of the fruit and makes it too soft to ship.

Another kind of cracking occurs when a rain catches the ripening fruit. This is especially true of Royal Annes, which then make the bulk of the dried cherries. The rain seems to soften the skin, making it easily broken, and loose from the meat like a peach. If not handled, the rain cracks are usually confined to a circle around the stem where moisture is held longer.

METHODS OF PACKING AND MARKETING.—Last year, Mr. Carlon shipped twenty tons east to the auction market from his home orchard of 4½ acres which he himself planted fifteen years ago. He had twelve tons left to sell loose in lug boxes at \$1.25 in California fresh fruit markets, to the canneries, and for drying.

In picking and packing for eastern shipment, minute details are considered very important.

PICKING BLACKS FOR SHIPMENT.—The black varieties are raised entirely for shipment. The Republicans may be allowed to turn black before picking. They hold their gloss and firmness well, on the long trip to the East. Bings and Tartarians should be picked at a "mahogany red" when they are just turning from red to black. Bings lose their luster if allowed to turn black, and are not desirable that way. Many of Mr. Carlon's cherries are packed in pastboard cartons holding about a pound net. These are packed into the ordinary cherry boxes for shipment, but add about eight cents to the cost of each box. Each carton has the cost of each box. Each carton has the name of the ranch printed on it, and last year, blue ribbons were used. The ribbons, however, did not seem to improve the appearance enough to pay. Every cherry is packed on the day it is picked, and shipped not later than the next day.

Royal Annes are well flushed, even through the meat when picked, so they

will have elaborated sugar and become digestible. They are picked carefully into 17 pound buckets, not heaped up for fear of bruising the under ones by the weight and are at once packed without squeezing.

The same picking and packing crew has worked for Mr. Carlon six or eight years. The one general rule in packing is never to put in a cherry the packers wouldn't want to buy on the market. "If there is any doubt about a particular cherry, there is no doubt about it," says he; "throw it out." And he claims to reject three times as many as most of his neighbors. Most of the shipping cherries are packed in ten pound boxes with waxed paper between the fruit and the wood, a certain definite side of the cherry to lie downward, and if the box is faced ten across, no more than eleven across will be allowed in any other layer. He aims to put up the fanciest possible pack.

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freight, 11¼c. a box for the shock, 10c. a box for packing, 1c. loading

charges, and 7 per cent commission, on low priced cherries. I must have



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POLLARD BROS.
South Pasadena, Cal.

a pack that will command a fancy price from year to year from the same trade. Poor cherries are as expensive to handle as the best ones, and the price they bring would often mean "red ink" to me as it does to others."

Only once in 15 years has he had "red ink" returns, meaning that the selling price had been below the freight and commission charges and "please remit the balance." His "red ink" year was one in which there was rain mostly through the ripening and the cherries could not stand the shipment.

CANNERY CHERRIES.—Ordinarily, large quantities of the white Royal Anne cherries are sold to the canneries, and there is good money at the price they offered last year, 5 to 5½ cents. But this was below their market value and the tenants of rented ranches last year were compelled by the owners to ship the cherries; and they made more money, Mr. Carlson says he always makes more than that price net by shipping.

Since cherries do not stand shipment in lug boxes because they bruise and discolor the syrup, the canneries are compelled to rely on the local supply. They didn't get enough of this last year on account of the low price offered, so that now their stocks are pretty well sold out, and there is sure to be money in cherries here this year for the man who has the fruit and holds it till marketing time.

For the cannery, the cherries are picked green and hard, for if allowed to color, they would not stand the cooking and hold their shape firmly, and the syrup would be discolored which would condemn it in the eyes of the trade.

DRIED CHERRIES.—Those cherries which get over ripe, rain cracked, or bird picked are dried on trays in the sun. Most of them are sold at about six cents a pound to a local packer, who runs them through a special seeding machine and a special preserving process, packing them into 25-pound boxes and selling at 15 cents per pound to all parts of the country. Twenty to 75 tons are handled this way per year. Before the seeding machine came into use, a smaller amount was seeded by hand in San Jose. Very few are seeded before drying, and the special process is necessary when seeded after drying. Cherries are the hardest of dried fruits to keep, and many have failed.

Shrinkage in seeding amounts to a half usually. Sometimes rain cracked Royal Annes shrink not much over a fourth of their weight. Stems and seeds must be taken out, and those which are mostly skin and stone yield nothing.

Though dried cherries are one of the richest of foods, the demand for them and the markets have had to be built up by personal submission of samples and other introduction methods.

Since fresh cherries shrink about three to one in drying, there is not much money in them for the grower or the packer, but drying afford an outlet for what would otherwise be wasted.

**PREVENTING ROOT KNOT
AND OTHER FUNGI AND
BACTERIA.**

To the Editor: Replying to your query in the issue of January 24th, for experience in dipping nursery stock for the prevention of "black knot" or "crown gall" and kindred fun-

gus parasites, I have long thought that the dipping of nursery stock in a solution of some germicide would in a measure prevent the introduction of foreign plant parasites. Therefore, two years ago, upon receiving a bill of nursery stock that looked suspicious, I dipped it in the standard solution of bi-chloride of mercury, of 2½ ounces to 15 gallons of water. My experience is, that this treatment has no effect on the vitality of the plant, but I have made no examination to see whether, anything like black knot has since made its appearance. Before immersing the stock, I cut off all root tips and every nodule so that I exposed freshly cut surface to the action of the solution.

In the use of bi-chloride of mercury for the control of the potato scab, my experience has shown that the only safe practice is to cut the seed before treatment, because, that is the only way that the spores in the potato can be reached.

I have discarded the use of the formaldehyde, for the reasons that it has not proved with me, to be as effective, as bi-chloride of mercury, and requires great care in its use to prevent its destructive effect upon the vitality of the seed.

As a fungicide for grain, I prefer the old fashioned blue vitriol treatment to formaldehyde.

In treating potatoes with bi-chloride of mercury I have left them in the solution 12 to 18 hours without effect on their vitality. Seed that was apparently sound when taken out of the solution and dried, would show that it was affected with the scab. I also find that the seed must be planted immediately when taken from the solution or spread out so that it can dry.

I would suggest that the experiment stations try the matter of dipping nursery stock out, because I am convinced that this will prevent the introduction of unwelcome plant para-

sites, such as black knot, pear blight, phyloxera, etc. As for myself, hereafter, I plant no foreign nursery stock until it has been treated in the bi-chloride of mercury solution.—H. S. H., Dixie, Idaho.

[This report embodies several very important facts.—Editor.]

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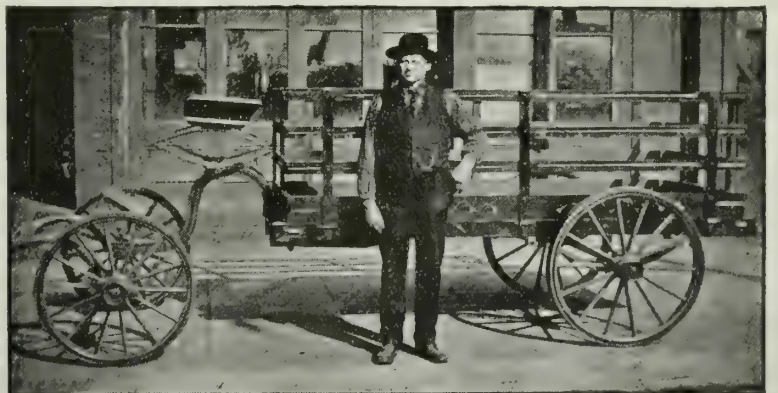
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How to Get Hybrid Walnuts.

One of the greatest of recent developments in walnut culture is the securing of the best roots to graft selected English walnut varieties upon. It is well known that the black walnut root is vastly superior to the English walnut root for vigor and resistance to certain root troubles. Still greater benefit is secured in strength and amount of growth by having hybrid trees to work the English walnut upon, for the grower can have larger and better bearing trees with hybrids than in any other way.

Still for the proper results one has to get nuts that are the first cross, that is from a pure variety, the flower being pollenized from a tree of a true but different variety. Nuts from the hybrid tree itself will not produce as strong trees as it is by a good margin, and the more generations, the poorer the trees.

Methods of getting good hybrid walnuts are of course of great value, owing to the wonderful vigor of the trees and the way that these hybrids can be obtained have been described by Dr. W. W. Fitzgerald of Stockton, as follows:

"These (hybrid nuts) can be obtained by gathering the catkins of the California black just as the pods are ready to burst and expel the pollen. Place these on large sheets of paper in the sun in some protected place where the wind will not blow the pollen away. Care must be taken that this pollen does not become damp or the catkins allowed to lay on the paper too long or the moisture from them will destroy the pollen.

"Then after separating the pollen from the refuse of the catkins and stems, dry it thoroughly and place it in dry paste board boxes and keep it in a dry place until the pistillate blossoms of the Eastern Black, which come out three to four weeks later, are ready to receive the pollen, having previously removed the catkins from the Eastern Blacks.

"Then place a quantity of pollen in several folded thicknesses of gauze. Tie this to the end of a long bamboo fishing pole by which means the pollen can be dusted over the surface of the Eastern Black walnut tree so as to pollenize the pistillate blossoms. Then after these nuts mature in the fall, I gather them, sprout and plant them in the nursery the following spring. These are first generation hybrids.

"Now, if I allowed one of these nuts to grow up and make a tree, the nut which that tree produced would be second generation hybrids. Again the nut from that tree if allowed to grow and produce a nut would be a third generation and so on. Of course a few may be pollenized from trees in the neighborhood and these will have to be rejected when they come up in the nursery row in the spring. After they grow a short time in the nursery it is easy to tell by the character of the leaves and the rapidity of their growth which are hybrids and which are not. The first generation of the Royal Hybrid is procured in the same way, using the pollen from the English walnut trees on California Black."

Of the buds used on hybrid root Dr. Fitzgerald states:

"It is just as important to select your buds as it is to choose the proper roots. The limbs of a tree vary as

much as the individual members of a large family. Buds should be selected not only from the most thrifty and heavy bearing tree, but from individual limbs on those trees that are good producers. While the majority of limbs will produce true, there are limbs that will produce inferior and irregular nuts, and they will also vary as to the amount and the time they will come into bearing. I know groves that bore very fair crops the third year after planting and other groves that have been planted eight years produced scarcely a nut. I have taken buds from different limbs of a tree and top grafted them on different limbs of another tree showing this variance. This is all due to bud selection."

ORANGES IN THE AZORES.

To the Editor: The enclosed clippings (from your issue of Sept. 27, 1913) are just received and I deem it only fair to "E. P. R." to advise him that he, evidently, has read only an excerpt of my report on orange culture in this island; which report was in response to an American inquiry regarding the possibilities here of installing small plants for utilizing the by-products of oranges and other citrus fruits, as is now carried on so successfully in various parts of Italy. With five years experience at this post and well understanding the difficulties attending shipments from and into the Azores, I could not very well suggest that oranges under scientific culture might be grown for export. If Mr. "E. P. R." intended sarcasm it's wasted, and for the benefit of your readers it might be only just to state that reports of American consuls are not always published in full by the Department of Commerce, nor should they be, as often the matter concerns only the inquirer.—E. A. CREEVEY, St. Michaels, Azores.

[As some time has elapsed, we remind our readers that Mr. Creevey alludes to a letter by E. P. R. of Clipper Gap, reviewing a statement about citrus opportunities in the Azores made by Mr. Creevey, in the way he describes above, and published in our issue of August 23. E. P. R. apparently desired to establish the fact that the Portuguese on the Azores are on to their job for what there is really in it, and they recognize the handicaps which seem to put large citrus fruit growing out of the question at present. Mr. Creevey says the same thing so our contributors cannot be far apart after all.—EDITOR.]

POLLINATING THE ALMOND.

To the Editor: Will you kindly express an opinion on the following facts:

(a) The almond blossoms on the trees of the Hatch varieties were badly washed by the late rain. (b) For shade purposes only one bitter almond was left growing at a considerable distance from the others. This tree burst into bloom immediately after the rain and the blossoms are full of pollen.

To prove: Would it be feasible to distribute blooming branches among the Hatch varieties to secure the fertilization of the latter or are the pistils of the blossom rendered ineffective by the washing?

Your moral support is all that I need for I have already done this on my own initiative, but any data you can give upon this matter will be valued by me.—J. H. W., San Jose.

[Presumably your method will be effective. We know that there is considerable duration to the susceptibility of pistils during moist conditions. So long as there are petals, perfume and honey to attract the bees they will probably mix up things all right in your laundried blossoms. Tell us how the facts from your test agree with this theory.—EDITOR.]

LUPIN GROWTH AND BACTERIA.

To the Editor: Is growth of small lupins on land an indication of sufficient nitrogen-gathering bacteria being present for alfalfa or does one have to get the culture especially for alfalfa? Some of the firms putting this culture on the market claim that culture of bacteria for alfalfa wouldn't

be effective on beans or that for beans on clover.—W. B. T., Ceres.

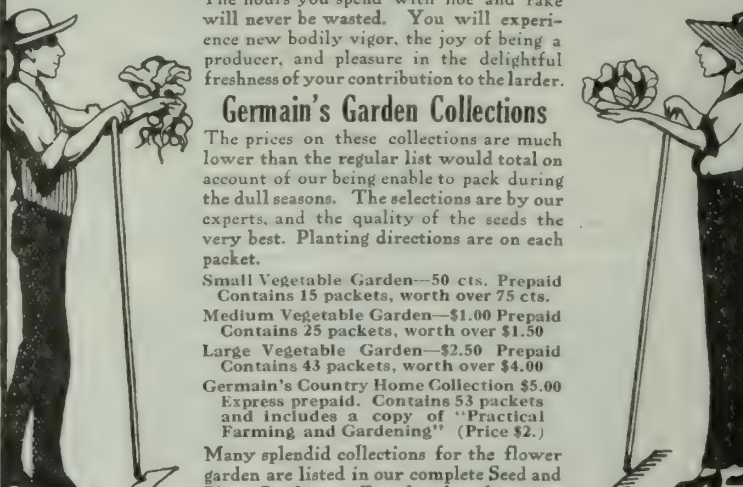
[Presumably, yes. You can tell whether bacteria are operating by taking up a young plant carefully and see if there are nodules on the roots. Presumably also the presence of germs on lupins, bur clover and other wild legumes equips the soil for alfalfa, beans, etc., or we would not get the crops we do by planting without inoculation. It is not at all sure that the early prescription of a particular kind of bacterium for each plant, is true.—EDITOR.]

FIGS FROM CUTTINGS.

To the Editor: Will you kindly advise me which is the most successful method to propagate fig trees, and what is the proper time to do it.—G. S., Newman.

[Put in good cuttings of last year's well matured shoots. They usually root freely. It is now the time to do it.—EDITOR.]

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Fruits for Imperial County.

The climatic conditions in Imperial valley are much different than in other parts of the State, and as a consequence many fruit practices which would apply to other places do not hold good there. There is also a difference in the varieties planted as some of the varieties that do well in our other interior valleys do not do well there.

F. W. Waite, Horticultural Commissioner, for Imperial county, recently gave advice to farmers, in that county, which was printed in the Imperial Valley Press, from which paper we take the following:

This being the time to plant deciduous trees I wish to call the attention to the tree planters to a few facts that may be of benefit.

Many trees were planted in the valley last season as well as other seasons, and the losses were great on account of lack of experience, conditions being vastly different here and many things to be considered.

In deciding to plant out different kinds of fruit trees, either for home uses or on commercial bases, it is advised to thoroughly investigate as to the varieties best adapted to our climatic and soil conditions, realizing that there is even a vast difference in soils in the valley which will need to be handled, and trees planted best adapted to that particular soil.

Apricots do well; among the best varieties for this valley are the Newcastle, Royal and Blemheim, on peach root, a peach root resists alkali best.

Among the peach varieties several are reported to do well, but have not all been tried out as to commercial planting. They are Waldo, "Stump of the World," Bidwell, Improved Yellow St. John, Alexander, Imperial, Palace, Belle of Georgia.

Most all varieties of grapes do well, the Persian 21, Malaga and Thompson seedless being the best for commercial planting. More slip skinned (Eastern) should be planted, as it will be found that there are some of them that will be very profitable to grow.

Prepare the ground by deep plowing, and if hard layers are at all present, dynamite is very beneficial, to allow the moisture to go deep. The roots of trees will follow the moisture. All trees and plants should be planted the same position as they were grown in the nursery, and close enough to the water line that they will receive plenty of moisture. After thoroughly settled, dirt should surround the trees so that they do not get water around the trunks, the plant taking up moisture at ends of hair roots and not around the trunk; and as the tree grows irrigation can be given farther away as the roots penetrate the soil much farther out than the limbs extend.

As to preparing the trees for planting the root system should be well pruned, at least one-half taken off with extra sharp cutting tool, cutting all bruised parts, as an extra precaution against crown gall or root knot; emerge the roots (after all ready to plant), in one pound blue stone to ten gallons of water, being careful not to bruise the roots thereafter. Set the tree in ground with bud side to the northeast, which is protection from the sun. All trees should have a covering loosely about the trunks to protect them from the sun.

All orchards should be thoroughly

irrigated during the winter, slow irrigation to get the water deep in the soil, and not so much irrigation during hot weather.

Tree culture requires knowledge gained by study and experience, as well as other lines of business, and best results are obtained only as we know how.

GIVE TREES A BALANCED RATION.

C. V. Freed, who lives in the red granite foothills of Placer county, has nearly lost faith in barnyard manure for his fruit trees. He thinks commercial nitrates are better, but perhaps there is another solution for his problem, based on his own experience.

Some years ago, Mr. Freed had a concrete pit in which he stored the liquid manure from his cows. This of course was mixed with some of the droppings and was very rich.

Selecting four plum trees on almond roots in a row, he applied five gallons of this rich liquid manure to one tree, ten gallons to the next one, fifteen to the next, and twenty to the next. He dug up the ground, poured on the liquid, and covered it with dirt.

Next season the twenty-gallon tree died, the fifteen gallon tree gummied considerably, the ten gallon tree gave a noticeably increased crop, while there was but little difference where five gallons had been applied. These tree conditions occurred three or four years and then the difference was scarcely noticeable. Thinking to give these trees the best of care, Mr. Freed applied rich farm manure to them but they did not respond.

Next season he applied a fertilizer containing 6% available phosphoric acid, 2 3/4% nitrogen, and 10% potash before plowing, and nitrate of soda afterward on the plowed ground. This was cultivated in, and the trees promptly responded in a highly satisfactory way. Thus Mr. Freed holds a tentative theory that barnyard manure is not all it is claimed to be.

But notice the composition of the fertilizer: 6% phosphoric acid and 10% potash. Long cropping had probably exhausted one of these necessary plant foods, especially necessary for fruit bearing, and a tree can't make fruit without the materials. Barnyard manure is high in nitrogen and low in the other plant foods so it could not supply the thing that was lacking in the soil. Our conclusion is, "Don't overburden the soil with one plant food; supply only that in which the soil is deficient; you will save fertilizer money, and will make fruit money."

TEACHERS OF AGRICULTURE

The United States bureau of education is the source of the following information: In 1910 there were about 1800 high schools teaching agriculture in the United States. A large increase in this number is indicated by the partial returns for 1912.

Instruction in agriculture is required in 17 states as follows: Alabama, Arkansas, California, Florida, Georgia, Louisiana, Maine, Mississippi, Wisconsin, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, Texas, West Virginia and Wisconsin.

The most usual salary for male teachers in the life schools in the United States for subjects other than

agriculture is \$700, while the salary most usual for teaching agriculture is \$1200. The explanation for the higher pay teachers of agriculture is given to be their scarcity in comparison to others.

DO NOT GET EXCITED ABOUT MILLETS.

To the Editor: I have plowed up some alfalfa land and have sowed it to grain, when that is off I want to sow it to millet. Now I would like to know of what value it is as a feed for cows in milk or for young stock or horses. Also, is there any danger in feeding it either green or cured? Has it even been tried in California? I see the Eastern seed houses advertise what they call New Siberian millet and claim it is rust proof.—D. F. C.

[Of course you will not get much millet or anything after a grain crop unless you have plenty of water to soak the land before plowing for the summer crop. Eastern seedsmen are dippy about millets; and they get out several new ones every year. Do not let them get you too much excited. Millet may be all right for a short,

barring season in the Dakotas and thereabouts, but if you have available moisture in California you had better grow corn, Indian or Kaffir. They are more nutritious and they have a long autumn to grow in in this State. All the millets we ever saw are pretty poor forage.—EDITOR.]

PULLING STRAIGHT-UP BRUSH.

To the Editor: I was interested in the inquiry of G. W. A., as to the cleaning of up standing brush and as you asked for a better way, in the Press of February 7, I have had considerable experience in that line and I know of no better way or cheaper in the long run than to buy a No. 7 Hercules stump puller single and double. I have used one considerable and find it does the work cheaper and better than any other way; it pulls out the roots and will handle anything from one to twelve inches in diameter. It can be anchored to stumps, rocks, or a timber buried four feet deep; only one horse is needed to work it when used double or single.

Ramona.

ED. T. WILSON.

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Uncle Sam Fights Thrips.

[Written for the PACIFIC RURAL PRESS.]

Uncle Sam is paying California thrips especial attention, having two men in the State for that purpose alone and two more for thrips and other insects. This makes four in California of the fifteen men of the Deciduous Fruit Insect Investigations division of the U. S. Bureau of Entomology. W. B. Wood is working entirely on thrips control at Napa, E. H. Siegler at San Jose, and the other two men at Walnut Creek are doing laboratory life-study and field-remedy work on thrips and other insects. Mr. Siegler came out from Washington, D. C., solely for this purpose and will return to Michigan early in April. Government men have been studying the thrips' life history and means of control some eight or ten years in Santa Clara county, and have devised a spray which kills both adults and larvae by contact. It is interesting to note that for three years, beginning in 1908, the blossoms of New York orchards blighted from unknown causes were discovered in 1911 to be thrips of the California species.

SHOULD BE READY TO SPRAY.—Few thrips had been found up to March 5, either by personal investigation of buds or by the trap-sheet method which imprisons them under a semi-transparent sheet laid on the ground under the trees.

But, says Mr. Siegler, there is every reason for every fruit-grower in infested regions to be ready to spray at a moment's notice. Ordinarily, thrips emerge gradually late in February and come on in large numbers for a few days about March 3. But this season, not having shown up much yet, they are likely to come suddenly in large numbers if they come at all.

CONDITIONS FOR DAMAGE.—If the blossoms are wide open at that time, they will be so far advanced that the insects will not usually injure them seriously. If the buds are just beginning to open, the female thrips will fly into them (no males have ever been found), and, with the mouth parts, rasp and suck the soft tissues of the developing buds. Later they will lay large numbers of eggs in the stems of the blossoms and leaves and the fruit for several days. With cherries, and prunes to a lesser extent, this is especially disastrous, as the stems are so weakened that they cannot hold the weight of the fruit.

TO KILL THE INSECTS.—Spraying at this condition of blossoms and thrips with over 175 pounds pressure and angle nozzles held close to the blossoms is likely to force the spray onto the insects, which kills them. The spray recommended by the Government is made and used as follows: Soap is made in the proportion of 6 gallons of water, 2 pounds of 98% lye, and 1½ gallons of fish-oil. Have the water boiling hot, then add the lye. When dissolved, slowly add the fish-oil and stir thoroughly. Allow this mixture to boil slowly for about two hours. When done, the soap should have a rosy effect when stirred. The above formula will make about 40 pounds of soap. Whale-oil soap may be obtained from dealers or a liquid whale-oil soap, now on the market, facilitates the making of the home-made emulsion. The emulsion is made of hot water, 12 gallons; fish-oil soap, 30 pounds; and distillate oil (raw), 30 to 34 de-

grees Baumé, 20 gallons. The emulsion should always be made in a power spray outfit, with agitator running at good speed during the entire operation. Have the water boiling hot when put into the spray tank and add the soap immediately. When all the soap has thoroughly dissolved, pour in the distillate oil slowly, keeping the mixture well agitated. After the oil has been added and is well mixed, pump out through the nozzles under a pressure of at least 175 pounds. The higher the pressure the better the emulsion. This distillate oil stock solution will contain about 55% oil. To dilute to 3%, the strength recommended, use 11 gallons to each 200-gallon tank. It is important when diluting to first pour in the distillate oil emulsion while agitator is going, then to add the water. The nicotine solution should not be added until the oil has been diluted to the proper strength. If the nicotine solution is to be used at the rate of 1 to 1600, use 1 pint to the 200-gallon tank; if 1 to 2000, add 12.8 fluid ounces (slightly over three-fourths pint) to a tank of 200-gallon capacity.

The oil penetrates all parts of the blossom, carrying with it the death-dealing nicotine. A larger percentage of oil alone would kill the thrips, but would injure the blossom.

A second application should be made four to ten days later, when the thrips are most numerous. This, in Santa Clara valley, is likely to be when pear buds are opening and the prunes and cherries begin to show their petals.

Other thrips will come and lay eggs. These will hatch on an average of eight days later into the small white larvae with reddish eyes sometimes called "white thrips," which will feed more or less than fifteen days, depending on the weather, on the under side of the leaves, devitalizing them. They often feed on the young fruit of prune trees, causing scab. If Sugar prunes are more scabby than the French variety, it is because their newly formed fruit and the larvae were ready for each other at the same time.

Almonds, peaches, and apricots are usually past the susceptible stage when thrips emerge. The single flowers of these fruits reduce the damage, anyhow, below that done to the clustered flowers of cherries, prunes, and pears, which suffer most severely.

When the petals drop it is time to use the same kind of spray on the larvae as on their parents. They would not suffer so much from water sprays as from the oil, which sticks to their oily bodies when water would run off.

But the method of spraying is different this time. Begin on the bottom leaves and work up toward the top of the tree, spraying the under side of the leaves. This gets all of the larvae, while if spraying began toward the top of the tree many would drop off unharmed and enter the soil to make next year's adults.

All larvae which escape the spray will fall directly to the ground, into which they will work their way six to ten inches, according to its hardness. Pupation occurs in maximum numbers in October and November, and by January practically all are transformed to adult thrips, staying in

the ground, however, until the weather is warm.

If the ground be plowed and well harrowed after they pupate, the disturbance is likely to kill them, for they are very delicate at this stage. All that have not become pupae will work deeper. Plowing does more good in prune orchards than among pears, for pears grow uprightly and the lar-

vae drop close beside the trunk where the plow does not disturb them. Main reliance for their destruction must be put in spraying.

HARDIE SPRAYERS

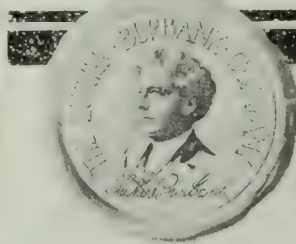


The Sprayer with the trouble left out.

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Never-failing bearer of full crops of the most beautiful oval, crimson fruit, 2 to 2½ inches in diameter. It is the largest of the early plums. When picked green keeps well, colors up well and develops a delicious flavor. Ripens from June 25th to July 1st.

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This has never before been introduced. Unlike most early tomatoes, it produces all summer. The fruit is the smoothest, largest and most productive of all early tomatoes with a superior quality of flesh.

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The ears are unusually large and the kernels are plump, sweet and white—unusually prolific, producing far more than most of the early corns. It is said to be the earliest corn known in the world.

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FLORIDA SOUR ORANGE

SEED-BED STOCK
grown without shade, as are ours this season, are vastly superior to those grown under shade.

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SOUTHLAND NURSERIES, F. H. DISBROW, Proprietor,
2141 East Colorado Street, Pasadena, California.

Fruit Notes From Many Sections.

[Written for the PACIFIC RURAL PRESS.]

Apples for drying in Sonoma county bring about one-half or one-third the price of those for shipping, and they cost almost as much to raise. The difference is mostly in spraying.

Irrigation of apples is not practiced in Sonoma county, even on the sandy Gold Ridge soil. Winter rains fill the soil deeply, cultivation conserves it, and the almost daily foggy mornings cool the temperature and reduce transpiration. This is very important on apples to prevent sunburn. Cool afternoon breezes help to keep the fruit from "cooking" on the trees.

Placer county is prime for almost all deciduous and citrus fruits except apricots and apples. The one blooms too early, the other sunburns and is of poor flavor and texture.

Royal Anne cherries are good for three purposes—if the canners do not buy them the Eastern markets will, and if they get overripe they shrink least of all in drying. But their color necessitates careful handling, for bruises quickly show.

A man on the Sacramento river lost

two or three crops on a large orchard by experimenting with an oil spray contrary to the advice of the horticultural inspector. This is like the fellow who wanted to know whether poison oak would hurt him; he rubbed it thoroughly on both hands and face and swelled up. Risky experiments are best on a small scale.

Wide-spreading, down-hanging limbs of a cherry tree are the result of the weight of heavy crops. They show up the heaviest bearers.

A Santa Clara county cherry grower has the finest rule we know of for packing fruit to ship East: "If there is any doubt about a particular cherry, there is no doubt about it—throw it away."

H. A. Bassford, of Vacaville, believes that the Gaviota is one of the best of the new shipping plums. He has sold them at \$2.30 per crate when all other plums went below \$2.

Mr. Watson, of Vacaville, planted early cherries in the lower end of a draw where water soaks the ground all winter. Of course, the cherries did not amount to much.

The crop of a 40-acre apple orchard in Pajaro valley is sold on the tree for a term of five years at \$10,000 per year.

L. F. Graham, manager for the Flickinger Canning Co., whose cannery is in their 250-acre orchard near San Jose, thinks the Hemskirk apricots are best to raise for canning and drying.

Forty acres of currants yielded J. J. Smyth, of Alameda county, \$9640 gross last season. He ships largely in plum crates containing four boxes each, which hold about four pounds net. This has secured the market for him, against the usual bulk shipments.

Ray Fountain, of Newcastle, shipped a full car of Burbank plums to auction last year and cleared \$600 on them. It is unusual to ship full carloads of any one variety.

Six chestnut trees about sixteen years old pay the taxes on T. R. Fiala's berry and apple orchard in Sonoma county with no labor except gathering the nuts.

Franquette walnuts are the variety for Sonoma county, according to J. E. Burgess, who has had the management of a 60-acre grove since they were planted seventeen years ago. They bloom after the middle of April, so that frost seldom hurts them, and up to date no diseases or insects have been serious.

Apricot blooms in Santa Clara valley made more than half a million gloriously bedecked inverted cones standing in close set phalanxes looking from above like wave-tossed seas of blossoms. They are gone now and prunes and cherries will shortly make still greater seas of perfumed bloom.

Until recently, cherries have been considered uncertain bearers in Santa Clara valley, but growers are awakening to the need of alternating varieties by the row for cross-pollination. Those who have tested this out speak most assuredly of its benefit and almost necessity.

Plants cannot build wood and fruit unless their food is dissolved in enough water to enable it to pass through the cell walls of which the plants are built. Soil food must be carried up, and the air food, which comprises the largest part of material

Why KILMOL is the Best Method for Exterminating Gophers and Ground Squirrels

The importance of killing these animals is recognized by every farmer. The Government report shows that these pests did over \$5,000,000 damage in one year in California alone. KILMOL offers you the cheapest, quickest, most effective way of killing these animals ever discovered.

KILMOL superior to poisoned grain.

Until KILMOL and the Destructor was used, poisoned grain had been the most popular method in use. But there are some disadvantages to poisoned grain which can not be overcome. Often domestic animals are killed by eating it. It can not be used in wet weather because the least rain or moisture dissolves the poison and washes it away. And as soon as the crops begin to grow, the rodents will not eat the poisoned grain, preferring the young and tender shoots.

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In addition to the high cost of these methods, there are other drawbacks. On account of the danger from fire, these methods can be used only in wet weather. Carbon bi-sulphide (waste ball) is very volatile, and highly explosive. Furthermore, should fresh air get to the animal, apparently dead from the fumes, it revives.

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With KILMOL you can kill these animals any month in the year, wet or dry. You can use it in your spare time, and you do not have to neglect other important work.

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SQUIRLGOPHENE

Kills
'em
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Government report favors KILMOL

The Government in determining the method it should use, discovered the truth of the statements above, and in the official report shows that KILMOL is the cheapest method.

Poisoned Grain—4 to 5 applications needed; cost, 40 to 50 cents an acre.

Waste Ball Method—2 applications needed; cost, 60 to 75 cents an acre.

KILMOL in the DESTROYER—1 application; cost, 18 to 28 cents an acre, with 98 to 100% efficiency.

If you want more facts and proof, write me and I will send you the Government report. Write me now—today.

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R. F. WILSON, Stockton, California.

from which fruit is made, must be dissolved and carried downward.

PRUNING HIMALAYA VINES.

[Written for the PACIFIC RURAL PRESS.]

The great trouble with Himalaya blackberries is their rank growth combined with wicked back-curved thorns. They discourage pickers and pruners alike. T. R. Fiala, of Sonoma county, has a system of pruning on his 120 five-year-old vines which reduces the trouble to a minimum and makes picking Himalayas a pleasure.

The vines were in awful shape two years ago, but Mr. Fiala persistently grubbed out all rooted tips and suckers six times, and just before picking he cuts off all lateral shoots, leaving the fruit spurs projecting from the vines for easy access.

New vines grow from the roots some 30 or 35 feet in a single season. These are trained on the ground by stakes under the wires which support the bearing vines, so they do not interfere with cultivation and picking. Not too many are allowed to grow. They will throw out a fruit bud about every eight inches, a large number of which will develop next year into

spurs bearing 30 to 60 berries. It will also throw out numerous laterals which are cut off before laying the vine on the wires in winter. If they were left, and wound around the wires, they would tend to choke out the fruit spurs besides being dangerous to pickers. Suckers are kept down, and there is a clear path for the pickers, lined shoulder high with luscious blackberries.

TROUBLES OF MEAT TRADE IN AUSTRALIA.

A serious situation has been created in Sydney, Australia, by a conflict between the employers and workers in the meat trade. A meat famine is threatened and all business is disturbed. Slaughterers, butchers and shop men demanded increases in wages and shorter working hours. The masters offered to compromise, but the offer was rejected.

A meeting of employers in every branch of the meat business was held yesterday and a resolution passed to raise an insurance fund to enable them to combine to fight the trades unions to a finish.



How Home Mixing Makes European Farmers Prosperous

They buy straight materials and mix them into balanced fertilizers containing two or three times as much

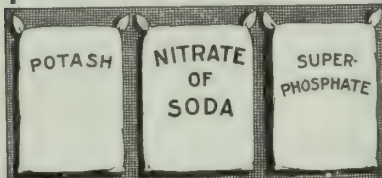
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as high-priced American complete fertilizers contain. Your fertilizer should contain 4% of active nitrogen. Does it?

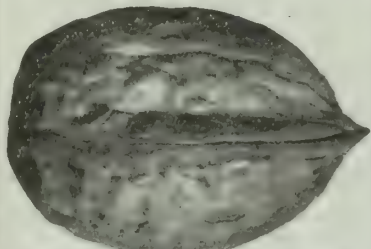
On land farmed for centuries, England raises 33 bushels of wheat per acre. We raise but 14. Europe imports 100% active Nitrate of Soda. You use dried blood, tankage only 60% to 70% active and you pay more for it.

"Home Mixine" is a book to help you increase your yields. Send your address to me on a postal card.

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Our soil grows good roots and a hardy tree, while our foothill district is free from every disease or pest.

Write us now concerning Your next season's planting.

Our Assortment is Complete.



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Constructive Agriculture—No. 10.

Fertilization Needs and Methods.

[Written for the Pacific Rural Press.]

[Although the department of Constructive Agriculture is given in large part to suggesting definite methods of agricultural betterment, the great and underlying principles of agriculture deserve notice and to Constructive Agriculture belongs the work of pointing out where progress and development should be made. For example, it is clear that fertilization is at the basis of all permanent soil production and that there is ample room for improvement in understanding of fertilizing principles and practices in California. The following being an attempt to outline this, should prove an essential part of this series of articles on great subjects.—EDITOR.]

The body of the soil is merely a holder of a comparatively small proportion of real plant food; when this plant food is removed there is left only dead mineral matter. The cropping of the land takes from the soil various amounts of plant food, and in the tens of thousands of cars of agricultural products yearly removed from California farms the resources of the soil are being gradually diminished. It is the problem of the farmer to keep his land supplied with food at as little expense as possible, while having that land produce as heavy crops as can be obtained.

MORE THAN FERTILIZER NEEDED.—Plants are in a way like people; they need more than food elements. People need air and water and other materials besides food to live and thrive; and even the so-called foods are only partially composed of the real food materials. Soils also, to produce plants, need water, air, good tillage, and other things than the leading fertilizing elements to produce crops properly, and the subject of fertilization includes also irrigation, cultivation, the addition of materials to improve texture, and so on.

THE THREE PRINCIPLE ELEMENTS.—In fertilizing, three great elements receive practically all the attention: Nitrogen, phosphorus (or phosphoric acid), and potash. To these can be added lime, very necessary to prevent acidity of the soil.

Humus is needed as much as the four named, but largely for the mechanical and physical benefit of the soil as a holder of moisture and plant food.

The other things used by plants, like iron, sulphur, and magnesia, are for the soil doctor to attend to, not for the average farmer to plan about.

THE NEED OF SOIL FOOD.—Fertilization is strictly the feeding of the soil to replace materials removed by crops. It is needed in theory and fact; it is a success. The evils of ignoring it are seen on every hand.

The fertility of virgin soil is proverbial. The three hundred years' farming of New England has left that soil in large part too barren for profitable farming unless plant food is supplied. All of the Atlantic States are far below former productiveness, except where modern methods have been used. The great corn belt in a hundred years has declined rapidly, and a half century's farming has exhausted the larger part of our soils for wheat. Having skimmed the top layer with wheat farming, it is merely

a question of time until we weaken all the rest that roots can penetrate, however we farm, unless something is done to put back food that has been taken away.

While the white race has been growing there has been virgin soil to farm. Now all real good virgin soil is gone, and under old methods less and less production is all to be looked forward to, while there is more and more call for food.

Successful farming is too common to make the outlook seem dismal. Well handled New England farms are as profitable as any, acre production in the corn belt is vastly increasing with progressive farming, and the soil is improving. In China and Japan the land has for forty centuries fed a crowded population and produces commonly more per acre than we can, with our methods, get from virgin soils. Results are obtained simply by returning to the soil as much as possible of plant foods and waste materials, regulating moisture, cultivating properly and seeing that enough vegetable matter is applied to keep the texture suitable. Leaving out irrigation and cultivation, our problem in fertilization is divided into two parts: seeing that the food elements are present, and seeing that there is vegetable matter enough, or humus, to make the soil yield up its riches.

WHERE THE ELEMENTS COME FROM.—Phosphorus and potash are found in soils alone, or derived originally therefrom, and in their source are different from nitrogen, derived from the air. We can return them to the soil only by buying from the outside. Nitrogen we can get wholly or in part from the air, and when we buy it, it comes largely from animal or vegetable sources, or as nitrate of soda from South America. All elements, of course, going into plants are found in greater or less extent in manures or in other materials derived from vegetable or animal matter. All elements (except perhaps potash) come in widely different forms, of different cost and value. It is an important part of fertilizer practice to know what materials to get or buy and in what form to buy them. We do not yet know enough to be sure exactly how best to fertilize anything and have largely to guess whether this or that expenditure will give best results, but the better combination we make of materials, the better results on vegetation and pocket book.

ELEMENTS MOST LIKELY TO BE NEEDED.—For our financial welfare it is fortunate that we do not have to buy everything that the plants take away all at once. Our soils contain large amounts of every plant food. All are removed little by little as crops are taken. Nitrogen usually gets scant first, while there is enough of the others in most soils to produce good crops for decades. The owner does not need to supply everything, he needs only to supply nitrogen and attend to moisture and cultivation. Or perhaps it will be something else that will be lacking, perhaps nearly all will be too tightly grasped by the soil for the crops to do well, and a complete fertilizer will have to be added. In fact more often than not more than one plant food must be ap-

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Prunes on Myrobolan

When the selling season opened we had a very large stock of prunes of all sorts on myrobolan root. Most of them are sold now, but we can still fill orders for French (Petite d'Agen), Imperial Epineuse, Conquest, Standard and Hungarian prunes, as well as everything else found in our catalogue.

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Nothing will add so much to your country home as beautifying the surroundings by planting ornamental trees and plants.

We have the largest and most varied stock of ornamentals in the United States.

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Walnut Trees



Franquette and Mayette grafted on Cal Blk., 6 to 8 ft., \$75 per 100, \$1 each 4 to 6 ft., \$60 per 100, 75 cents each 3 to 4 ft., \$50 per 100, 65 cents each 2 to 3 ft., \$25 per 100, 35 cents each California Black Walnuts, \$3 per 100 Blenheim Apricots, No. 1, 15c each, No. 2, 10c. each. French Prunes.

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New Stock Just Arrived
Contains 13% nitrogen in the most available form and about 30% soluble lime

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plied. It is also true, however, that by knowing the character of the soil and the demands of the crops raised, one can plan for the fertilization better than if he went at it blind.

As a rule it can be said that our soils are rich in potash and pretty well fixed for lime, moderately well supplied with phosphorus, and short in nitrogen and humus, or decayed vegetable matter. Our methods of culture have been usually those that will destroy this humus, cutting short the possibility of the soil to hold nitrogen. Furthermore, experiments and practice have shown the advantages in many cases of using good supplies of phosphorus fertilizers. Even the use of lime has advanced by leaps and bounds in the past two years, despite former belief that lime applications would almost never be needed to normal California soils. What is true of lime is true of potash. Where to use these is a matter of experience, judging by the nature of the soil, the time it has been cropped, and the kind of crops raised.

GENERAL RULES.—The first general rule in fertilization should be to keep the soil well supplied with humus; in other words, to keep the soil loose and nice as soil is where lots of vegetable matter has been mixed in. You can do that with stable manure, with farm wastes, by plowing under natural vegetation, grown for the purpose, or wastes of the crop removed. A surface that bakes and runs together shows the need. Where weeds, grain, vetch, or other legumes can be grown to plow under, all right, otherwise it is stable manure and commercial fertilizers. No matter how much stable manure, cover crop, or similar material is applied, it is rare that more will not benefit.

Humus-making materials are great nitrogen carriers as a rule and affect other plant foods by making them more available for use, improving moisture conditions, and the soil generally. Our best humus makers are the legumes, like alfalfa, burr clover, vetch, beans, and peas, and no soils are better for these plants than those of California. Grown for cover crops, or simply to plow under, they are fine for the soil, and fine for giving nitrogen. Where they cannot be grown, to give as much nitrogen as is wanted, nitrogen must be bought, and nitrogen fertilizers in California give usually bigger results than any other.

There is a saying, "Nitrogen for growth, phosphorus for fruit, and potash for quality." Phosphorus compounds are wanted to make fruit, and where grains or seeds of any kind are harvested, they are good with legumes like alfalfa. Potash makes strong, fine quality stems and wood, improves quality and yield of fruits.

The need for lime is shown where sour clover grows, where legumes will not grow vigorously, and often where water may have washed out much free lime by standing too long on the soil. The need of other foods need cause no worry if these are supplied.

Our soils are rich, and with good tillage and ordinary cropping they will yield far more food than needs to be returned to them. Aside from knowing in detail what fertilizer to use and the amount, the best rule to go by is to put all manure and other wastes available back to the soil, grow and plow under vegetation, keep land properly irrigated and tilled, and return to the soil the elements probably needed as soon as results show that a

lack is developing.

There is too much buying of commercial fertilizer without regard to the analysis given on the tag of every bag; and without considering what elements are probably lacking in our soil. We can fertilize wrong, but when we fertilize right, we find it pays.

GOOD ROADS A NATIONAL AFFAIR.

G. W. Harney, Horticultural Commissioner of Yuba county has written a ringing letter to Senator Works protesting against the proposed national law for good roads as a "pork barrel measure." "But if it is," he continued, "and the appropriation is judiciously and economically expended, it will prove to be one of the best 'pork barrel' schemes ever devised by the members of the House of Representatives.

"It is the dusty, rutty summer roads and muddy, slushy chuck hole winter roads that compel isolation and loneliness in rural districts, that implant in the hearts of every live wire boy or girl born on the farm a determined ambition to live in a city.

"Given smooth, hard turnpikes every denizen of the rural districts would own an automobile, every poor and makeshift farm house would become a country villa, assessable values would be doubled as fast as the roads were built, the cost of transporting farm products to shipping points would be reduced nine-tenths, the City would merge into the Country. Why, my dear Sir, the possibilities and benefits that would accrue to the nation from the universal building and maintenance of good roads are enormous, boundless, tremendous. It is the bounden duty of the Federal Government to take the lead in the building of goods roads. It is the only organization that can cope with the great problem."

VEGETABLE NOTES.

[Written for the PACIFIC RURAL PRESS.]

Orange county celery and beets are losing acreage in favor of lima beans. This is quite largely a labor problem. One ranch yielded six sacks per acre the same season another yielded over 45 sacks per acre.

Few lima beans are irrigated in Orange county.

Bush limas shelled out too much in handling on the Golden West Ranch. Thirty acres of lettuce may be seen in one piece near Santa Clara.

Ed. Trapp of Los Angeles county says to plant every row exactly straight if possible. It makes cultivation and irrigation twice as easy. The crooked part of a row gets more than its share of water before the straight part is soaked.

Last year's rhubarb crop netted members of the Rhubarb Growers' Association of San Lorenzo \$977 per box average for all shipped through the Association. The grower receiving the highest average netted \$1311.

Chili pepper seed planting in the fields of Orange county is about completed for this season.

Field planting is less trouble and less shock to the plants than transplanting, and brings the main crop at the right time for the canneries or drying.

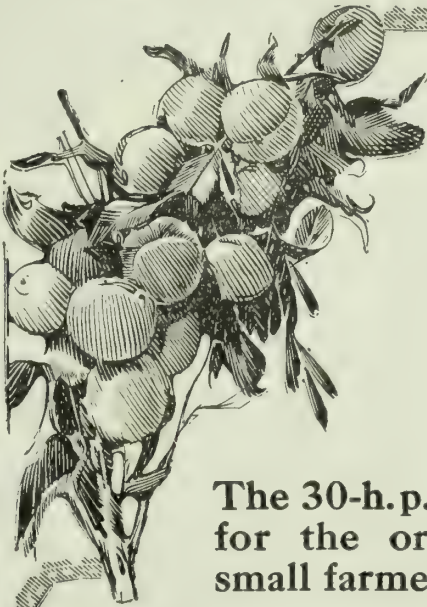
CORN-GROWING IN CALIFORNIA.

To the Editor: Will you tell me

what kind of field corn grows best in this part of the country and also when is the best time to plant it? Is March too early? Why do not the farmers in California plant their corn so it can be plowed both ways? Would this not be better than planting thick in rows like we plant fodder corn in the East?—H. O. H., Modesto.

[No one knows yet which is the best corn for California, for corn-growing is not a large business in this State. Probably no one kind will be best for the whole State. We are chiefly growing "Large Yellow Dent" and "Small White." "King Phillip" and "Deaming" are leading in some places. You must plant after frost danger is over. March is usually too early. Most corn is planted in May.

Growing corn in rows is not a California invention: it is very common in the great corn States of the Mississippi Valley. In crossing that country last fall, we saw much more corn stubble in rows than in hills. Hills of anything are a bad thing in California summer time. Growing in rows makes for flat culture, which reduces evaporation from the soil. On clear land there is no need for cross-cultivation to kill weeds. Besides, planting in rows breaks the sweep of hot wind through the field, which corn does not like. Plant in rows, a good distance apart, say 3 to 4 feet: do not drop too thickly. If you need irrigation, locate the rows so the water will have a grade for the right speed of flow.—EDITOR.]



Save the Moisture and the Trees

The 30-h. p. Caterpillar is built for the orchardist and the small farmer.

- It is guaranteed to do the work of 14 good sized horses.
- It will turn in its own length. It steers as easily as an automobile. It won't bark the trees.
- It is light in weight and only 60 inches high without canopy.

CATERPILLAR

Reg. U.S. Pat Off.

These are important points in themselves. But coupled with the Caterpillar track, they make an ideal orchard and small farm tractor.

—The soil in an orchard should never be packed. You cultivate to save the moisture. Packed soil means loss of moisture. The Caterpillar tracks prevent all packing. They leave the soil loose.

—The loose soil makes tractor operation difficult. But the Caterpillar tracks work on any soil. They never slip or mire. They work even in swamps.

The Baby Orchard Caterpillar will do all your work. It will plow—cultivate—seed. It will haul your crop to market—over any roads—muddy, hilly or soft. Its belt attachment will do all your stationary work. Write us for catalog. Tell us about your work, acreage, etc., so we can pick the right outfit for you.

The Caterpillar is built in three sizes, 30, 60 and 75-h. p. We also furnish plows, harrows, harvesters, scrapers, etc., all built extra strong for tractor work.

Send to the nearest branch for bulletin C 3 describing 1914 Caterpillar construction in detail.

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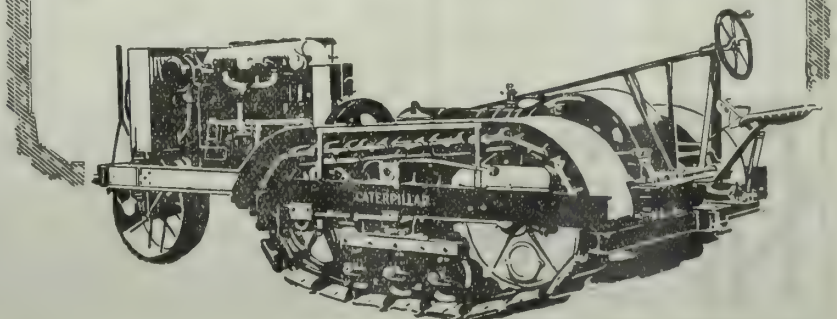
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Glorious rains and exceptionally favorable conditions mean a long planting season. Our splendid assortment of fine fruit and nut trees, vines, berries, etc.—and **SPECIAL LOW PRICES**, offer a big opportunity to the planter.

Write for Special Quotations

on anything you want. We can supply you promptly.

APPLES

A fine stock to select from of all the best commercial varieties. Our stock is the wonder of everybody that sees it. Ask for special quotations on Jonathan, Smith's Cider, Esopus Spitzenberg, Stayman's Winesap, White Winter Pearmain, Yellow Belleflower, Yellow Newton Pippin, etc.

PEARS

Our supply of large sizes is exhausted, but we have a fine assortment of Bartlett, P. Barry, Doyenne du Comice, etc., in medium sizes. Fine stocky trees.

PLUMS

If you have a reasonably good heavy soil, you certainly should be interested in such varieties for shipping as Wickman, Diamond, Giant and Wicksen.

PRUNES

Our trees are perfectly dormant and in fine shape for planting out. Write for special prices on trees budded on Almond, Myroblan and Peach roots.

APRICOTS

During the last five years we have never had enough Apricots. We anticipated a big demand this year and while sales have been heavy, we can still furnish Blenheim, Hemsikirke, Royal, Tilton, an Apricot, Peach and Myroblan roots.

PEACHES

We still have a fine stock of peaches. Nearly all sizes—Elberta, Foster, Lovell, Muir, Phillips Cling, Sims Cling, etc. Prices lower than ever.

ALMONDS

Almond growers are simply coining money. We have a splendid stock of all the standard varieties. Write us for prices and information.

GRAPES

The table grape and wine business are in better shape than they have been for years. Raisin grapes are also coming into their own. Write us for prices and suggestions. We have a splendid stock for wine, raisin, table and shipping—and please remember that it makes little difference what you may want in the fruit or ornamental line, these Nurseries can supply you promptly and will guarantee your order to be shipped in good condition and all stock will prove true to name.

Write for Illustrated Price Catalogue

listing and pricing over 2000 varieties. A copy will be sent free to any address upon request.

PAID UP CAPITAL \$200,000
FANCHER CREEK NURSERIES
GEO. C. ROEDING, PRES. AND MGR.
Box 18, Fresno, California

AGRICULTURAL REVIEW.

General.

Organization of farm labor unions is shortly to be attempted, according to the editor of the Square Deal of Battle Creek, Michigan.

A sardine canning plant is to be established on the Sea of Galilee if the Turkish government will permit.

The San Diego exposition will have a tea plantation ready to harvest when it opens on January 1st.

Increase of foreign trade in fruit and vegetables will be encouraged on the Pacific Coast by an agent of the U. S. Department of Commerce.

Arizona marketed 15,000 lbs. of fresh dates, raised on alkali land, finding a good market at 25c per pound, at which rates an orchard in full bearing should yield \$200 per acre. The trees recovered from the winter freeze in good shape. One man can take care of 10 acres.

A feature of the Panama-Pacific Exposition will be an exhibit of bearing date trees raised in California.

The Minnesota Experiment Station claims that fruit trees, as apples and plums, would not bear if the bees did not fertilize blossoms.

Five hundred pounds of beeswax is to be shipped in this month by the Diamond Match Co. to Ohio.

The United States crop report for March 1st gives the price of wheat to producers as 96c for California and \$0.831 for the United States; oats, 45c and \$0.389; corn, 86c and \$0.691; barley, 60c and \$0.511; rye, 95c and \$0.619; potatoes, 90c and \$0.705; hay, \$11.50 and \$12.37; and eggs, 25c and \$0.242.

"American agricultural machinery is popular in Bulgaria because it gives better service than that of foreign manufacturers and lasts longer," says Consul General Chas. Campbell.

San Joaquin county farmers are already buying grain bags to avoid the rush. A Merced man bought 18,000 at 8½c last week.

Sonoma county hop-pickers threaten a general strike if Ford and Suhr are not released and sanitary conditions on hop ranches improved. They also demand a minimum of \$1.25 per hundred pounds for picking.

The recent heavy frost in Florida injured the vegetable growers, but not the citrus men.

Western New York has lost a quarter to two-thirds of the fruit crop by recent freezes, according to reports. The agricultural college investigation showed about 80% of peach buds dead. Last fall the peach crop from this section was over 4000 cars.

Watchmen take the place of automatic alarms in Chico orchards from March 1 to April 15. Thousands of dollars have been invested in frost-fighting apparatus.

Santa Clara county orchardists are warned by Maurice Connel, official weather observer for San Jose, to get their fire-pots ready for frosty weather.

Eastern fruit consumers may pay their local express agent for fruit from the Pacific Coast and Wells-Fargo will buy and ship it to them.

Four southern coast counties have 27,000 acres of walnuts bearing and 8500 non-bearing, as reported in Pacific Fruit World.

Broom Corn.

James Miller writes in the Sacramento Valley Monthly as follows: "I have raised three crops of broom

corn on Mr. R. A. Foster's ranch, five miles east of Corning, near the Sacramento river. In 1911 I had a poor stand on account of the cut-worms. I had to plant part of the ground three times, and that made late planting, but with all the trouble they gave me, and considering my poor stand, I raised 25 tons of bush. At that time I was operating a broom factory at Corning, and although broom corn was \$10 per ton, if I had sold my brush it would have brought me \$2750, and I had 940 sacks of seed, which I sold for \$20 per ton, which brought me \$900, making a grand total of \$3650. I paid Mr. Foster one-fourth for rent. My expenses for raising and gathering the crop amounted to \$1550 and this included wages for myself and teams."

Cotton.

Imperial county has nine cotton gins. They have been picking cotton for six months and are still hauling to the gin. Volunteer crops are growing well and will be ready to pick early in August. It is estimated that 40,000 acres of cotton will be planted in this county this year. In 1909 the valley produced only 350 bales; in 1913, 20,000 bales.

Arizona long-staple cotton recently sold in Liverpool at 23½c, netting the growers 21½c. The crop of 1913 was 2100 bales.

A new variety of cotton has been produced in Egypt by selection. This new cotton, which is brown, and of a most silky texture, has a staple which is probably stronger than any of the other varieties of Egyptian cotton. One of the most characteristic features of the plant is its shortness and the fact that it is covered with bolls, over 100 having been found on a single plant.

Citrus Fruits.

California navels sold higher in car lots at Chicago last week, partly due to lighter receipts, while Florida oranges declined with heavier receipts.

Oranges are leaving the Riverside district at about 200 cars per day. Shipments up to March 1st were about 5000 carloads, and the March shipments are expected to aggregate 4500 cars.

Lindsay district shipped nearly 2000 carloads of oranges. The season is over for this section.

Sanger navels are cleaned up, but the valencias and seedlings are yet coming.

Boxes of the first-prize fruit of the San Bernardino Orange Show, selected from the 3,000,000 oranges displayed, were sent to Governor Johnson and President Wilson with notes saying they were the best of California's \$35,000,000 crop.

The recent storms did not seriously damage the citrus crop.

Lindsay orange-growers recently organized the Co-operative Orange Association. Picking and packing will receive particular attention, as the Eastern markets have been rebelling at the poor quality shipped in recent seasons.

Placer count is to have one of the largest citrus nurseries in northern California.

A rebate of 15c per hundredweight on carload lemons shipped East since November 15, 1909, has been ordered by the Interstate Commerce Commis-

TREES

Now Is The Time to Place Your Order for

Ornamental Trees, Vines and Roses

We have a magnificent stock of all varieties of evergreen trees, shrubs, palms, etc. Whether you just want a few trees or plants to beautify your own home grounds, or whether you purpose planting in a large way, you will find it to your advantage to get in touch with us before placing your order. We have a splendid stock of

MAGNOLIAS

CEDARS

CYPRESS

OLEANDERS

BALM OF GILEAD

POPLARS

PALMS, ETC., ETC.

Climbing and Trailing Plants, Ferns, Bamboos, Etc.

In our nurseries we have growing many rare tropical and sub-tropical trees and plants, Evergreen Shrubs, Spruces, Firs, Yuccas, etc.

Hardy Field Grown Roses

The soil in which our Rose stock is grown is particularly adapted to rose culture and we feel safe in saying that our stock cannot be excelled anywhere in California. Write for prices and suggestions.



Let us help you with your plans.

If we can be of any assistance to you in making your selection of desirable ornamentals for your grounds do not hesitate to write us. We will be pleased to advise with you as to what is most suited to your locality and as to the laying out of your grounds.

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Listing and pricing all stock grown by us, both fruit and ornamental—over 2000 varieties. Sent free upon request.

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Box 18, Fresno, California

sion, following affirmation by the United States Supreme Court of its similar order of the former date. These rebates, amounting to about \$400,000, will be paid at once to the growers.

The Foothills Growers, Incorporated, is a new citrus-marketing company of Porterville, also having high ideals of quality pack.

The San Jose Chamber of Commerce is spreading knowledge of the lemon-growing possibilities of the Santa Clara valley. "With irrigation, smudge pots, and five acres of lemons set on warm sandy Santa Clara soil, a man

CITRUS Trees

ORANGES
Washington Navels
Valencia Lates
And all other varieties.

LEMONS
Lisbon Eureka
Villa Franca

POMELOS
Marsh Seedless
and Triumphs.

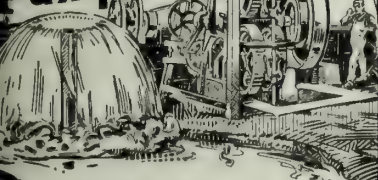
We also have a good stock of all the leading budded varieties of **AVOCADOS** and have a magnificent stock of **OLIVES**—Mission, Manzanillo, and other varieties.

ILLUSTRATED CATALOG FREE. Lists and prices all stock carried by us—over 2000 varieties of citrus and deciduous fruits, ornamental trees, vines, plants, etc. Write for your copy and ask for special quotations.

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Pomona DEEP WELL Pumps



A Smooth, Maximum Flow of Water— at Minimum Cost.

No Jerk, Jar or Vibration.

We make a specialty of building Pumps for raising water from deep wells for farm or irrigation purposes.

Write for Pump Catalog No. 54 P and tell us about your pumping Problems.

POMONA
Manufacturing Co.
Pomona, Calif.

We also make a full line of Gates and Valves for cement pipe irrigation.

FOR 25 CENTS

We will send postpaid, seven 5c packets of seed put up Fresh in our own store. Your selection.

Buy your bulk seed from us. "Seeds at Low Price and no Price can be better."

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116-118 E. 7th St, Los Angeles, Cal.

DATE GROWING

Just issued—a complete treatise on Date Growing; 300 pages, 40 illustrations. The only book published which gives a full, clear and practical account of growing the Date Palm. \$2.00, postage 16c.

WEST INDIA GARDENS,
Altadena, California.

and his family need never worry for the future," says Secretary Joseph T. Brooks. W. F. Fisher, two years ago, took \$1200 from 125 trees. William Miller brought a dozen large Villa Francas to the Chamber of Commerce last week, taken from trees twelve years old which had always borne large crops.

The orange season of 1913-14 began at Valencia, Spain, November 10. This was due to co-operation of shippers and growers which will confine shipments to Liverpool, the principal market to the probable demand at all times. Grapefruit seems to grow well in the Fair Oaks district. Thirty boxes, sold for \$75, have already been picked from a dozen trees, and they are still loaded as if none had been picked. At this rate, the twelve trees are well worth the reported \$1000 offer, which would make the land worth \$8000 per acre.

Olives.

Butte county olive nurseries sold out of trees, and plans are laid for a large increase in the planting next year.

J. G. Estep, of Shasta county, has planted 1150 olive trees.

Reports are that a 2000-acre olive orchard of the Mission, Manzanillo and Ascolano varieties will be set out in Imperial valley, and a packing plant and oil mill will be erected on the place. Spineless cactus, cotton, cantaloupes, etc., will be grown between the rows.

Imperial boosters claim that olives grown in the valley are larger, mature earlier, the trees are two-thirds larger, and are free from the black scale.

The Maywood Packing Co., of Tehama county, recently received specially good prices for over 10,000 gallons of pickled Queen olives.

Over 200 acres of olives are set out near Hanford this spring.

Consul B. F. Chase estimates the Tuscany olive crop at 60%, owing to snow in December and January.

Many hundred acres have been planted to olives in Kern county.

Los Angeles strawberries were on sale in Stockton last week.

Prof. E. B. Babcock advocates, in the university students' publication, the Journal of Agriculture, that dairy testing methods be applied to fruit trees. He cites an orchard in which the expense per tree is \$2.25 per year. The fruit sold at about 1½¢ last year, requiring 150 lbs. to pay expenses. Of the 1525 trees, 16 years old, 490 yielded less than 150 pounds. Had they not been included in the grove, it would have yielded a net income \$353.40 greater.

Deciduous Fruits.

Prune prices showed advance even on small sizes last week.

The Apple Advertiser of America met last week in New York, electing Louis Erb, of Missouri, as president. Its object is to increase the consumption of apples.

The Loma Fruit Co. recently incorporated to handle its own apples at Watsonville. Shareholders represent a normal production of 200,000 boxes. They wish to establish a standard pack under their own label.

Pruning peaches in bloom is advocated by the California Farmer. It enables the removal of poor-bearing twigs and those which would overbear and have to be thinned.

A thousand tons of clingstone

peaches are shipped into Suisun from the Yuba City district at a cost of about \$5 per ton over the cost of those grown at hand. The Winters Canning Co. advocates growing them more extensively in the Suisun district.

Prune and lemon trees were all sold out of Santa Clara county nurseries. There are quite a few left in Sonoma county.

A. R. Gallaway, horticultural commissioner of Sonoma county, inspected over 52,000 nursery prune trees for planting. The next highest kinds of fruit are: Cherries, 10,000; peaches, 6800; berry plants, 6800; apricots, 4300; apple trees, 1200.

Twenty Sutter county orchardists recently received 1000 trees each of new alkali-resistant cherries and peaches from the agricultural station nursery at Chico.

Ten thousand prune trees were planted in Butte county by the Bidwell Orchard Company.

Grapes.

The gold medals for the best red and white grape juice exhibited at the State Fair were recently received by the Bruck Grape Juice Co., of Napa.

C. T. Hepburn, of the Pioneer Fruit Co. at Fresno, reports from a meeting of the Western Fruit Jobbers' Association at Kansas City, that they can use all the table grapes that can be packed, if they are in good condition.

Table-grape growers of the San Joaquin organized last week with \$20,000 capital stock distributed at a \$1 share per acre. Information on markets and market demands is the object. A campaign will be waged against shipment of unripe grapes.

Vegetables.

An Alameda county man has just received 1500 rhubarb plants from Pasadena. J. B. Wagner, of Pasadena, says that the southern rhubarb will not do well on the heavy rather cold wet soil of the Alameda rhubarb district, because it is developed in light, warm, well-drained sandy soil.

By a decision of the Interstate Commerce Commission, potato shippers are paying reasonable rates. Lower charges are made if the shipper takes the liability of damage by weather.

Antioch ships asparagus all over the United States. The cutting and packing season began about March 1st.

Santa Clara foothill growers have been marketing large quantities of peas at \$5 per 80-pound sack.

There is talk of a tomato cannery at Manteca.

Grain.

Grain in the big valley is so well advanced that growers feel confident of a fine early crop.

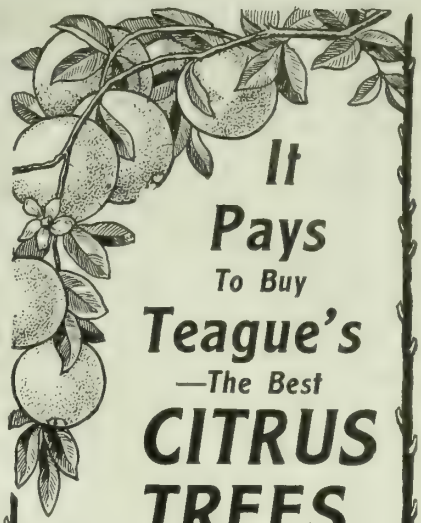
Canada will have 750,000 acres more in grain this year than last.

The University Farm has finished seeding 200 acres of barley and 56 of oats.

Lands Changing Hands.

A land rush is on this week for homesteads in Dixie valley, 60 miles out of Fallon, Nevada. Water is found a few feet below the surface, and the valley, which is 100 miles long, is surrounded by snow-clad mountains.

The 100-acre M. A. MacLean ranch in Stanislaus county recently sold at \$100 per acre. It includes a twenty-acre orchard and 80 acres of alfalfa.



It Pays To Buy Teague's —The Best CITRUS TREES

In buying any kind of a tree it is the utmost importance to buy the best, and this is if anything more important with citrus trees, because they cost more. There is more money involved, and a few cents on the first cost of a tree is of very little consequence when you take into consideration its future care and future yields.

Buy your trees from those who have spent years in the business, and who are in a position to back up their guarantee.

WE GROW ALL THE STANDARD SORTS

It doesn't make any difference how large or small your order may be, we can take care of it in good shape. We can supply all the standard sorts in Oranges, Lemons and Pomeles—as well as many specialties that are in limited demand. Write us about what you are planning on setting out and get our suggestions. We are always glad to advise with prospective planters free of charge.

Our Handsomely Illustrated Booklet "Citrus Fruits"

—covering the industry from seed to market — propagating, budding, cultivating, fertilizing, irrigating, etc.— will be sent to any address upon receipt of price—25c.

QUOTATIONS GLADLY GIVEN.

Write us.

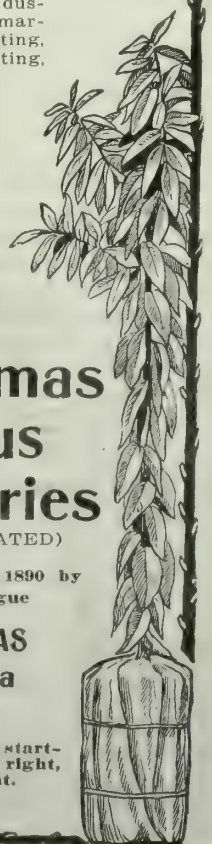
San Dimas Citrus Nurseries

(INCORPORATED)

Established in 1890 by R. M. Teague

SAN DIMAS
California
U. S. A.

Teague trees are started right, grown right, and shipped right.



Possible Results of Australian Butter.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

When the imported butter factor first came to the trade's notice last year, it was thought by many, and especially the dairymen, that the situation would right itself with little or no trouble, as the chief importations would be made during the winter months, when the production in this country is light and as it was a storage product it could not compete with our fresh goods.

At this date things look differently however, for not only has this imported article lowered the price of our better grades several cents a pound, but it has caused severe losses with our storage product and many dealers are selling storage stuff at 5 to 8 cents a pound less than they paid for it.

This storage feature is what hurts most, for even with a great many poorly managed dairies, this winter's prices allow for good profits, but the summer prices will be the drawback.

In the past it has been customary to start storing butter when the present price was reached and by storage the heavy summer supply could be taken care of, at prices reasonably fair to the producer.

The coming heavy producing season will be different, according to the storage people, for no attempt will be made to store for more than 22 cents a pound and some will likely be handled for less.

It is now generally thought that this condition will cause prices to be lowered, both in winter and summer, for while the actual amount of imported butter sold, has not amounted to much, it has been held as a club to knock down the ordinary high winter price.

Ordinarily we could, after the completion of the Panama canal, open up markets for storage butter along the Atlantic coast from New Orleans to New York, as their winter market is high also but this year's attempts, in that direction, found the importers busy there also.

At first glance it would seem that imported butter will seriously handicap future production and development; and there is little question but that it would, were it not for two things; first, that we can produce feed cheaper and in more reliable quantities than most other countries and second, there is so much room for improvement in most of our dairy operations, that we can produce butter at a profit with much lower prices, than we have had in the past.

Not only must we produce butter more economically, but it is necessary that our product be of a higher standard, if it is to compete with the quality from abroad. It would seem then that in order to keep the industry on a profitable basis, the thing which will be necessary is better dairying.

Anyone, who is conversant with conditions, in the State, realizes that the dairy cow has been a bonanza for every class who would maintain her. It did not matter how poor a cow she was, she could, with good butter prices earn her keep and a little more. It did not matter how poorly the land was cared for, it was rich enough to produce fairly good crops.

It did not matter how slack the

dairyman was in handling his product, the keen competition and high prices enabled him to find a market glad to get his cream, regardless of the quality.

This condition could not be remedied by simply giving well meant advice, for it is the dollar that most dairymen are interested in; and as long as they could not see any extra dollars for the more careful methods, they were not interested. This is shown by the fact that, while the handling of land and cream has not been, generally speaking, much improved, the class of stock has been materially bettered, for even the duller could see that with better stock they would get more fat and consequently more dollars.

A large manufacturer, and dealer in dairy products, recently remarked: "It would not be at all surprising to me, if, in five years time, we will be saying that the imported butter was the best thing that ever happened; for there was nothing which could have so well made all dairymen see the need of well bred stock and better dairy methods."

This of course is only a prediction, but it is a stern reality that we must have cows that will produce more fat on practically the same amount of feed, and that this fat must be handled in a more sanitary manner to enable the creamery to make a higher and more uniform grade of butter than has been the custom.

Of course the manufacturing of butter is only one of the markets for dairy products, as we have an increasing city milk and ice cream trade to supply, a growing demand for condensed and powdered milk, and also a cheese market.

But the butter market takes such a large part of the production that prices will, in most cases, be governed by that market.

There are a great many of our dairymen, who probably will eliminate themselves from the industry when the fight for better practices starts in earnest, but they are so many thousands of acres planted and to be planted, to alfalfa which requires the cow for a market, that very likely, as our friend has told us, "In five years time we'll be tickled to death, that it happened when it did," the "it," meaning of course, imported butter.

GOVERNMENT WORK WITH ALFALFA.

The U. S. Department of Agriculture through its branch of Irrigation Investigations has been conducting experiments to determine the duty of water for alfalfa in various parts of the Sacramento valley. A section of country around Los Molinos, California was among those selected to study the use of water. Careful measurements were made of the water applied to 11 selected tracts of alfalfa ranging in size from 5 to 26 acres. The average amount of water applied to these farms was 5.9 acre feet per acre. The greatest amount applied to any one farm was 8.8 acre feet per acre in 5 irrigations and the least amount used was 3.9 acre feet per acre in four irrigations.

The country around Los Molinos is one of the newer irrigated sections

of the Sacramento valley. Many of the colonists are wholly inexperienced in the handling of water and much of the land is poorly prepared for irrigation. A common practice is to flood the alfalfa from field ditches but the use of border checks is becoming more general. The soil is of a rich alluvial silt loam and well adapted to alfalfa. Water is obtained from the Los Molinos river and Antelope creeks and delivered to settlers at an annual cost of \$2 per acre per year. The average yield of alfalfa from the farms under observation was 5.4 tons per acre from five cuttings.

Several fields yielded two tons per acre for an individual cutting and the average for the year was materially reduced by an invasion of grasshoppers during the summer.

CO-OPERATIVE IRRIGATION INVESTIGATIONS.

A tract of 35 acres on the University Farm, at Davis, California, is devoted to irrigation investigations conducted under the auspices of the United States Department of Agriculture, the University Farm and the Engineering Department of California.

The following work is in progress:

1. Investigations of the duty of water for alfalfa.
2. Investigations of the advantages of irrigating grain—wheat, barley, and oats.
3. Investigations of the duty of water for grain, sugar beets, corn, and potatoes.

4. Investigations of crop rotation under irrigation, using alfalfa, wheat, barley, oats, sugar beets, potatoes, Egyptian corn, and Indian corn in all possible rotation combinations.

5. Investigations of the relative advantages of the basin method, deep furrows, and shallow furrows in orchard irrigation.

6. Investigations of vineyard irrigation.

7. Demonstration of irrigation of alfalfa by check, furrow, and side-hill flooding methods.

8. Installation of standard irrigation measuring devices for testing and demonstration.

9. Tank experiments in water requirements of crops and in evaporation losses of irrigation water.

The results thus far obtained have been partially published in Bulletin 248 and Circular 108 of the Office of Experiment Stations, U. S. Department of Agriculture, and in Part II of the Third Annual Report of the State Engineering Department of California. A circular giving the results through the season of 1912 is now being printed in Washington and will soon be available for free distribution on application to "Irrigation Investigations," Berkeley, California.

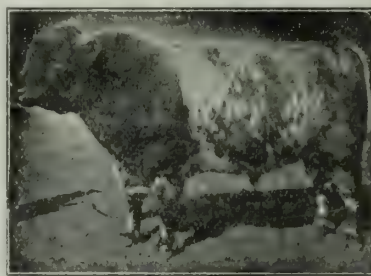
Proprietors of a Fresno meat market were recently fined for attempting to sell meat of a cow which sickened and was killed shortly after freshening.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop.,
Davis, California

BREEDER OF

**SHORT-HORN CATTLE
SHROPSHIRE and
MERINO SHEEP**



KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

A. W. MORRIS & SONS CORP.

Holstein-Friesian Cattle

Woodland, Cal.

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes
For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

Veterinary Notes.

UNNATURAL MILK.

To the Editor: We have a healthy-looking Holstein cow, fresh last June, and will freshen again in March. She gives a large mess of rich milk, so that I still (February 4) sell 6 lbs. of rich yellow butter a week. But the buttermilk has a dirty pink color. Is it safe to use her milk and butter?—C. W. L., Dinuba.

I would hardly know how to answer this question. There are hundreds of reasons. It may be due to improper water, fungus, disease of udder, and too numerous causes to mention. I would recommend you to call upon some laboratory expert to make an examination of the milk.—Dr. E. J. CREELY.

UDDER TREATMENT.

To the Editor: Would you kindly advise me as to what is the best treatment for cows' udders just before and after calving? Some of my Holstein heifers have given me a lot of trouble, the swelling extending along the milk veins nearly to the front legs. The last one would not yield to hot water, so I put on some Kendall's spavin cure, then greased it with lard; it reduced the swelling, but took off some of the skin.—J. M. W., Orland.

It is natural for the udder to become enlarged before and after calving owing to large amount of milk in the udder, and the (milk) veins are enlarged to bring the blood in sufficient quantity to supply the udder. Leave it alone and it will resume its normal size by itself. Remember that Holsteins are heavy milkers; give plenty of exercise to prevent milk fever and see that bowels are regular.—Dr. CHAS. C. WING.

INTESTINAL CATARRH.

To the Editor: I have a registered pig about four months old which has but little control of his hindquarters. He eats well, but does not digest well, for he has diarrhoea. He has been in this condition for some time.—C. A. G., Ceres.

The hog has gastro-intestinal catarrh. Feed but once daily and give only light food such as bran mash. Give two-ounce doses of epsom salts twice a week and use the following: Bismuth subnitrate, 4 oz.; zinc sulphocarbonate, 4 oz.; soda bicarbonate, 8 oz.; iron sulphate, 6 oz. Mix together and give two ounces twice daily.—Dr. CHAS. C. WING.

HORSE OUT OF CONDITION.

To the Editor: I have a horse broken out all over like she had been stung by bees and stiff from soreness. Her legs and brisket are swollen; she has been sick six weeks; fair appetite; hair all came off lately; skin is hot and dry and scabbed all over; has a foul smell; some people jokingly remarked that she has smallpox. I have been feeding condition powders and washing her with creolin, "sheep dip."—R. A., McCormick.

Give Fowler's Solution arsenic $\frac{1}{2}$ oz. morning and night and use the neutral oil mixture given in J. P.'s query.—Dr. E. J. CREELY.

CHICKEN LICE ON HORSE.

To the Editor: I would be very much obliged if you could give me a

good remedy for mange on a horse. I bought a horse two weeks ago and it did not have a spot on it when brought here; now one side of face has large patches where hair has fallen off, and full of small scabs. A neighbor of mine says it's mange. Is he correct?—J. P., Sacramento.

The trouble is chicken lice. Use a mixture as follows: Neutral oil, 8 oz.; Pearson's creolin, 2 oz.; raw linseed oil, 16 oz.; milk sulphur, 2 oz. White-wash the stall after cleaning it thoroughly.—Dr. E. J. CREELY.

EQUINE BRONCHITIS.

To the Editor: I have a horse 12 years old which has coughed more or less for two years. I have taken him to two veterinarians; one pronounced it pink eye, the other an affection of throat and lungs; but neither did any good. The animal is in good condition and does not seem to be much affected except while actually coughing. Rarely coughs while working or on the road; wind good; heavy feeder; bowels work well, but inclined to a little loose and the manure rather coarse. Cough always commences between 9 and 10 o'clock at night, when I should judge stomach to be full; and has occasional spells during the night. Have changed feed, giving less hay and also fed everything damp, but with no effect. Have also tried two condition powders, and also had teeth attended to by a qualified veterinarian with no effect.—H. C. W., Denair.

These are effects of bronchitis: Give the following: Olive oil, 4 oz.; kerosene, 4 oz.; guaiacol, 8 oz. Mix and give tablespoonful three times daily. Give wet food only.—Dr. E. J. CREELY.

OPERATION NECESSARY.

To the Editor: I have a black 3-year-old colt that has a tumor on top of his withers. I have had this growth cut out twice by a veterinary and it is still growing. The first I noticed of it was about a year ago; at that time I started using different remedies, but nothing I used seemed to do any good. I am positive that the veterinary did not get all of the tumor, which has caused it to return. Will you kindly tell me through the columns of your paper if there is anything I can use to kill the growth. It is now about the size of an egg and seems to spread larger since I last had it removed.—F. L. C., Groveland.

This requires the services of a skilled surgeon to remove the entire growth. Write to Dr. A. O. Longley, Fresno, and ask him to recommend the nearest qualified veterinarian.—Dr. E. J. CREELY.

TREATMENT FOR A COUGH.

To the Editor: Will you kindly tell me what to do for a horse with a bad cough? It does not seem to be epizootic, for she does not run at the nose, although she discharges a thick matter when she coughs which seems to come from the lungs.—E. C. V., Manteca.

Glyco-heroin, 8 oz.; cod liver oil, 6 oz.; spirits camphor, 2 oz. Mix, give tablespoonful three times daily. Wet hay, feed from the ground.—Dr. E. J. CREELY.

PREVENTION OF MILK FEVER.

To the Editor: Is there some way

of preventing milk fever when freshening? Is saltpeter good for a cow that has caked bag? I also have a fine cow which has a bony substance coming on her leg about where a spavin appears on a horse.—G. W., Pomona.

Milk fever can be prevented by restricting the diet and giving the cow a good saline purge several days before calving. Cows which are fine milkers are predisposed while calving the fourth or fifth time. Apply iodine, turpentine, and sulphuric ether, equal parts, once daily to prevent bony growths from increasing in size.—Dr. E. J. CREELY.

BLOODY URINE.

To the Editor: I have a heifer calf that for the last day or two has been passing a bloody mixture when urinating. It appears to be about one-third blood mixed with the urine. We do not know that she has ever had an accident or been injured. She gets skimmed milk and middlings, oat hay, and alfalfa pasture. Her coat is a little rough, but she does not seem to

be very sick. No veterinary in this locality. Can you tell me the cause and remedy? I do not find anything about it in "1000 Questions in California Agriculture Answered."—A. W. C., Middletown.

This may come from the kidneys or bladder and is probably due to an ulcerative condition of the mucous membrane. Adrenaline chloride 1 in 1000 solution. Dose: teaspoon to $\frac{1}{2}$ cup salt water once every third day. Cease giving if the blood stops.—Dr. E. J. CREELY.

FUNGUS IN HOOF.

To the Editor: My horses hoof is being eaten away by a fungus in the sole and under it. I am using the medicine recommended in the PACIFIC RURAL PRESS by Dr. Creely but it is not yet healed.—H. L. Ceres.

Continue using the medicine. It will cure but will take months and must not be neglected a single day. When dry weather sets in you can turn the animal on grass without shoes.—Dr. E. J. CREELY.

San Francisco Veterinary College.

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With the Live Stock Men.

Among those who have recently started into the breeding of pure-bred Holsteins is Ben Rhodes, the popular auctioneer of Los Angeles. Mr. Rhodes now has about 15 head of female stock and is using a sire from the Whittier Reform School's herd.

One of the fine Jersey cows in the herd of the Polytechnic School at San Luis Obispo is just finishing an authenticated test which, it is thought, will put her at the top of the Jerseys in this State for records.

The demand for grade dairy cattle is keen in all parts of the State, owing to the prospective large hay crop and poor prices. It seems hard to say where this demand will be filled, as the large dairy sections were pretty thoroughly cleaned of surplus stock last year.

A fine new modern dairy barn, feeding sheds, and calf lots are being erected on the Stalder ranch, near Riverside, where a herd of registered Holsteins will be maintained.

Official Holstein records made under supervision of state agricultural colleges are reported regularly to the Holstein-Friesian Association. For the last week in January the reports are just sent out. Ninety-six full-aged cows averaged a little over seven years old, twenty-three days from calving, milk 463.8 pounds, per cent fat 3.5, fat 16.224 pounds. Fifty-four junior two-year-olds averaged two years, one month, eighteen days, twenty-six days from calving, milk 319.2 pounds, per cent fat 3.55, fat 11.32 pounds. Records were received for 267 animals, nearly half of which were heifers with first or second calf. Their total production for the week was 109,708.3 pounds milk containing 3,831.6 pounds butter-fat.

F. W. Goff, of Sacramento county, will remove to his 240-acre ranch near Placerville and engage in stockraising.

The Oregon Agricultural College says that grubs of the ox warble should be removed by slitting the skin over them and lifting them out with small forceps. These grubs are hatched from eggs laid in summer by a fly which looks somewhat like a honey-bee.

A prohibitive export tax has been placed by the Mexican government on cattle and hogs, in order to keep them at home. This follows a recent similar action by the State of Coahuila. It affects Texas contracts for 10,000 head.

The impending world's shortage of beef is making stockmen optimistic. Breeding stock is in active demand.

A delegation of Western cattlemen called on President Wilson last week in favor of Congressman Kent's bill for federal regulation of public grazing lands.

Over 2000 beef cattle shipped into Imperial valley since January 1 for the alfalfa grazing, besides many dairy cattle, horses and mules, have been inspected by the county live stock inspector, C. A. Dawdy.

I. G. Zumwalt, of Colusa county, operated his farm cheese factory for the first time recently, putting out a

hundred pounds of superior cheese, sold locally. He expects to enlarge his herd until the factory output will be 200 pounds per day.

J. D. Bradley, of Winnemucca, Nevada, recently shipped 11 cars of cattle to Reno.

A Tonopah dairyman was recently arrested on complaint of Director Dinsmore of the pure food bureau, being charged with watering his milk. A Santa Clara county dairyman was recently fined \$50 for the same crime.

The Texan Panhandle Association has outgrown its State and held the recent annual meeting in Oklahoma. Stockmen from all over the trans-Missouri region attended and many went directly to Fort Worth for the annual meeting of the Texas Cattle Raisers' Association.

The usual 350,000 young cattle wintered well in the Panhandle and will be moved to Kansas in April.

The U. S. Department of Agriculture recently advised a complete change of feed and forage for horses affected with blind staggers (cerebrospinal meningitis). The trouble is widespread.

W. C. Gallagher, of the San Joaquin country, is making careful tests on several similar bunches of hogs to determine how much pork may be made from various grains.

Drinking alkali water does not produce the "alkali disease," nor does it affect the vital organs abnormally, is the conclusion of the South Dakota Experiment station, after testing it out with the strongest alkali well water. They caution against allowing cattle to drink from partly dried alkali ponds, however, since they must be injuriously thirsty before they will do so. The alkali water made the kidneys work harder, as the urine was increased from 114.6 to 151.4 pounds during the ten-day periods, though there was a decrease of 148 pounds in the water drank in the same period.

A study of the summer range covered by two bands of 12,000 sheep in Washington by the Agricultural College, induces the following conclusions: The shrubby plants and brush of the region studied are "much more important as sheep food than are grasses" and herbs. The two species of buck-brush are "by far the most fattening plants on the range." The sheep did not eat ferns or conifers. Leasing definite range is by far the most satisfactory way of handling these lands.

The Geo. H. Croley Co. of San Francisco shipped a fine young Poland-China Boar to the Hawaiian islands by the steamer Enterprise, sailing March 14. The boar was purchased from the well known breeder of this variety of hogs, M. Bassett of Hanford, Cal.

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SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

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FOR SALE—Black Percheron registered 7-year-old stallion. Good foal getter. State license to serve. Will sell, for want of use, at low figure. Sufficient time allowed purchaser for horse to pay for himself. F. B. Chandler Co., Vacaville, Cal.

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POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

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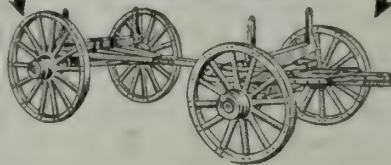
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Quietness in Milking Barn.

[By H. E. DVORACHEK.]

Like many dairy subjects, the question of quietness in the milking barn during milking hours has its opposing supporters. On the one side you hear the argument that during milking time the cow should be entertained with soothing song and music. Some go so far as to install victrolas in their milking barns. On the other side you hear that the barn at that time should be a place of absolute peace and quiet. Let no sound be heard to draw the cow's attention from that mysterious process of milk manufacture save the quiet rumination of the herd and the sound of the regular streams of milk as they fill the milk-pail.

Personally I am not in favor of con-

condition. I doubt whether or not the milker can reach that point either by noisy singing or by noiselessly sulking about his work.

Colorado Agricultural College.

WE SURELY DROWNED THE BUTTER.

To the Editor: In your issue of February 21, page 228, you state that California prunes contain 72.82% water, and "as they come from the tree contain less moisture than butter." Do you refer to California butter? Though I like prunes, the question is apt to be viewed by me from the standpoint of an alfalfa and butter producer.

If we ship our butter to you, must

movement of infested stuff from one county to another, just as sharply as they have been applied to your State. If a man gets a pest in his field he does not care whether he gets it from the next county or the next State. Really an infested product should not be allowed to move at all.—EDITOR.]



IRENE DEWDROP—H. R. 231850.

Register of Merit record, 8700 lbs. milk; 529 lbs. 9 oz. butter in one year as a two-year-old. She will be sold at the Breeders' Consignment Sale on the Hillier Jersey Farm, Modesto, April 2.

verting the milking barn into a conservatory of music, especially if the program is to be furnished by milkers who become so absorbed in their yodeling and humming that with them milking becomes a secondary consideration, and the cow soon loses patience and will not give down her milk readily. Neither do I believe the investment in musical instruments necessary. On the other hand, if I should enter a barn at milking time where deathly silence prevails, although a number of milkers are at work, I should be inclined to believe that something was wrong and I would not be at all surprised to see a milker suddenly rise with the uplifted milk-stool, for it has been my experience with milkers that those who sulked about the barn with never a word to say were generally out of sympathy with their work and therefore the first to use the milk-stool. I maintain that you cannot and should not keep a cheerful and contented milker absolutely quiet.

But where are you going to draw the line, if noise aggravates and silence is monotonous and breeds discontent? Let each cow have her name. Then put the man at some work other than milking who does not take kindly enough to his job or to his string of cows to call each one by name, to bestow an occasional friendly pat, and to ask her to step over and put her foot back. Let the milking hours be a pleasant event for both the cow and milker. When the two get to a point where they have formed a mutual friendship, you have reached the ideal

it conform to this standard to pass sanitary inspection?

I am moved to this inquiry by California's rejection of Nevada spuds two years ago until the California stock had been sold, because there were some eel worm spuds shipped out of here, notwithstanding former California Horticultural Commission reports stated that nematodes occurred in that State, but did little damage.

Of late our hay has been turned back because it contained some Russian thistle, though the latter is not a noxious weed and may be a benefit.

We cannot help asking, "What next?" Perhaps California is not the agricultural paradise it has been pictured if it is so afraid of competition. Must it be "protected" against Nevada, China, Australia, etc.? You have a goodly number of Nevada readers and perhaps you can help us. V. F. Hazen, Nevada.

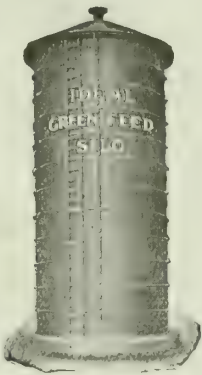
[We were surely writing carelessly when we put so much water in that butter—which was certainly shameful, when we were slamming another chap for doing the same thing. We were thinking of milk and writing of butter. Of course, butter under some requirements can only have 16% water, though it often has considerably more, but if you try to sell butter in California with as much water as there is in a ripe plum, you will have more trouble than you have had in the past with eel worms and Russian thistles.

As to the California attitude toward Nevada, we believe that all these rules which are designed to reduce the spread of pests ought to apply to the

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Will the Horse Survive?

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

There are so many versions of the horse versus mechanical power for both farm and city work, that it requires more perhaps than man's foresight to predict what may be expected by the horse raiser in the future.

It has always been considered in every country that the city markets had the commanding influence on prices as these markets demanded the cream of the heavy horse supply and were willing to pay for it. There is little doubt but what prices at present would be considerably higher in these markets, if it were not for the motor truck for while there are still many features of city hauling that have to depend upon horse power, the mechanical power has prohibited any increase in horse prices.

There is also little room for doubt but that the horse raisers have brought much of this motor age doctrine about on account of not producing the type of horse suited for city work and it is a well known fact that much of the horse substitution has been made possible by the trouble experienced in finding a supply of the right kind of horse flesh.

Through apprehension of future progress in mechanical construction farmers are making this supply still more disappointing to the buyer so it does not seem probable that we will see more horse flesh on the city streets but rather less, although there will perhaps always be a place for the right types regardless of new inventions.

Leaving the city prospects for a time we find a growing interest in mechanical power on the farm also. At a glance this looks to be still more menacing than the city proposition for the engineers here have gone to the branch where horse flesh must be manufactured and if the motor predominates there it certainly would be disastrous to the horse. Even with all of its discouragement, in other ways it would seem that right here is where the horse will always be cock of the walk and more especially so here in California than elsewhere.

True, one would never gain this point of view from the motor power manufactures for they have demonstrated that the grain farmer and others who handle large areas of land, can often till the soil cheaper with tractor power than horse power.

It is not our aim to predict that even all large farms will give way to the tractor for it is generally known that horse flesh is an absolute necessity on many of our largest farm operations where more intensive methods are required and so we find that even were our land development to stop where it is there would still be a large demand for good horses.

As a matter of fact however all who are in a position to prophesy the future of our farm development, agree that it will only be a short time until the great majority of tillable land will be subdivided and in place of one crop farms of large acreage we will have an empire of smaller farms where intensive cultivation is pursued.

If these conclusions are correct the future of the horse looks very promising, in fact it would seem that with such conditions there would be no over-supply of horses, if the city mark-

ets were entirely eliminated, for the smaller farmers are not, as a rule, producers but rather consumers of horse flesh.

This latter statement is not merely prediction for it is already demonstrated to the man who will travel over the State in quest of information. Go into any locality where land values have made the small farm a necessity, and whether it be orchard land, alfalfa land or truck growing you will find that the power used is the horse and, of still more interest, these horses are not raised but purchased from sections where land and feed are cheaper.

If this small farm practice continues to grow there would seem to be restricted districts for horse breeding in all probability the hilly sections will be mostly benefited by this and if it works out that way it would be a good thing all the way through for it is a well established fact that horses raised in such places have better feet and stronger constitutions which are essential things for good horses to have.

Not only are horses grown in this way better able physically to cope with engine power but the cost of production is far less. Even with our present high meat prices and a depressed horse market, the price per pound of horse flesh is considerably more than for any other kind of meat although perhaps such a comparison is very seldom considered by the farmer.

To go a little farther into the small farm situation it will be seen that the future demand will not be for inferior horses but rather for the highest quality obtainable. This will become necessary as the price of feed will require the utmost efficiency and the poor horse cannot deliver that so it is evident that not only will there be a growing demand for horses but also that demand will be for better stock.

Although there are no statistics as to the number of horses sold, for the city trade, enquiries among large horse buyers reveals the fact that this market is relatively very small compared to the number of horses grown.

Considering the situation from all of the different angles it would seem that instead of horse growers being governed by the talk of their competitors who are selling mechanical power they should first be well enough acquainted with their own business to see the future requirements of horse power and the small farmer, who now seems a certainty in this State, will we believe become a bigger asset to the horse than all of the city markets we ever had.

Conditions are changing very rapidly and the horse business is no exception so it is not unreasonable to suppose that the man who raises horses now will realize as good prices in the future as the most sanguine could hope for.

SELLING DE-HORNED BULLS.

To the Editor: If I have my young registered bull dehorned will he be as readily salable as he would be with horns?—B. L., San Jose.

[It would depend upon the customer and for what he might want the bull; for use alone or possibly for exhibition also. It is a question for breeders' experience and we would like to have recital of it.—EDITOR.]

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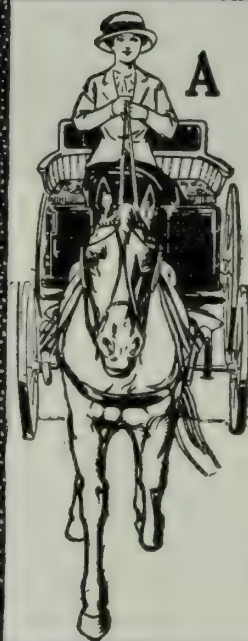
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OVER-GROWING THE STOCK.

To the Editor: What is the cause of a tree growing much larger than the root? Where it was budded on the stock, there seems to be a large bulge and the top of the tree died and the root is alive and vigorous.—SUBSCRIBER, Vacaville.

[It is a lack of proper relationship in the growth of the top and the root. Where the appearance is as you describe, it is called "over-growing the stock": where the top becomes less in diameter it is called "under-growing the stock." The former is more likely to make the tree short-lived, as you describe, but neither is good. Both ought to enlarge at about the same rate to make a good durable union. For example the plum is a slow grower; the peach is rapid; they usually have affinity enough to go together, but the plum is better on the peach root, than vice versa. Your

trees are on a wrong root. If you wish to save the root, put in a graft, after sawing off below the bulge, of a slower growing fruit which is known to agree with the root. As you do not say what kind of trees you have we cannot give you any more specific suggestion.—EDITOR.]

MEXICAN EXPORT TAX ON CATTLE.

Arizona cattlemen expect that the Sonora export tax, which has just gone into effect, imposing a fee averaging \$10 gold on every head of cattle crossing the border, will mean the death of the cattle exportation business. This duty is more than double the import collected by the United States customs officials before the recent tariff.

Kings county recently repealed the \$2 bounty on coyotes because neighboring counties would not co-operate.

To Control Blind Staggers in Horses.

In past years horses have died by the thousands in Texas, Iowa, Kansas and Nebraska from a disease affecting the nervous system, popularly known as blind staggers or forage poisoning. The Department of Agriculture has received urgent requests for help against this disease from 16 different states, and as a result it is now publishing a bulletin containing definite instructions for combating this disease.

BAD FORAGE THE CAUSE.—Investigators have practically established that this horse disease can be controlled effectively only by a total change of feed and forage. It is quite obvious that there is a direct connection between the green forage, exposed pasturage and newly-cut hay or fodder which the horses eat, and this Cerebro-spinal meningitis, as the disease is known to scientists. In fact, eating of such forage when contaminated is undoubtedly the most important cause. Over 95% of cases of this disease in Kansas and Nebraska during the out-

break of 1912 were maintained under such conditions. Bad pasturage is also to be guarded against.

Many horses have died from blind staggers caused by eating moldy baled hay. As soon as the hay was eliminated the disease ceased. Other horses in the vicinity not fed upon this hay failed to contract this disease. Later some of the moldy bales were opened and exposed to the sun for three or four weeks. After this the hay was fed to horses without producing any ill effect. Forage poisoning, therefore, seems not to be an infection but rather what is called "auto-intoxication"—that is, it is due to certain chemical poisons or toxins formed by the activity of internal organisms. These poisons may be present when the forage is taken into the body or may be formed in the stomach. The nature of this poison is still unknown.

CHARACTERISTIC SYMPTOMS OF THIS DISEASE.—When the horse is taken with the blind staggers it usually exhibits a disturbance of the appetite, depression and weakness, while there is trouble in swallowing, drooping of the head and sleepiness which may give way to excitement and attacks of dizziness. The vision is impaired, which results in the staggering gait that gives the disease its popular name. Certain muscles of the neck and flanks are cramped and there is a grinding of the teeth. Sometimes the animal has pains as though it were afflicted with colic. The animal will walk strangely if in an open space and will try to push through any obstacle it encounters. In the stable he will press his head against the stall or rest it on the manger. Sometimes he will crowd into a corner. The temperature at the beginning of the disease ranges from 103 to 107 degrees F but within 24 hours the temperature falls and eventually becomes subnormal. The animal is often down on the second or third day and may or may not get up when urged. Death usually occurs in from four to eight days, although death may follow within ten hours of the first symptoms, while chronic cases have been known to last for three weeks. About 90% of the affected animals die.

MEDICAL TREATMENT GENERALLY UNSATISFACTORY.—While medical treatment in the vast majority of cases has not brought results, nevertheless if it is used at all it must be prompt and before the disease has had time to run. The digestive tract should be cleaned out thoroughly at once. Active and concentrated remedies should be given. Afflicted animals, however, have great difficulty in swallowing immediately after being taken, so that these remedies must generally be given by injection. Arecolin in one-half grain doses, subcutaneously, has given good results as a purgative. Early in the disease urotropin in doses of 25 grains dissolved in water and given by the mouth every 2 hours, appears to have been responsible for the recovery of some cases of the malady.

AFTER TREATMENT.—After the animal has been purged, the treatment varies according to the symptoms. The following measures have been recommended:

The first and most important: Feed

only clean well-cured forage and grain, and pure water.

Calomel, salol, and salicylic acid, to disinfect intestines.

Mild antiseptic mouth-washes are advisable.

Copious cold water injections, if the temperature is high, give better results than antipyretics.

An ice pack applied to the head is beneficial in the case of marked nervous disorder.

One-ounce doses of chloral hydrate per rectum should be given if the patient is violent or muscular spasms are severe.

If the temperature becomes subnormal, the animal should be warmly blanketed.

If much weakness is shown this should be combated with stimulants, such as strychnine, camphor, alcohol, atropin, or aromatic spirits of ammonia.

During convalescence the usual tonic treatment is recommended.

CATTLE PRICES AND GOOD SIRES.

[Written for the PACIFIC RURAL PRESS.]

We recently visited one of the oldest dairy sections, in the State, that has for years been almost wholly dependant upon the dairy industry. With few exceptions the quality of the cows has not been bettered through pure-bred bulls, yet through cheap feeds and large ranches, coupled with good butterfat prices those dairymen, mostly foreigners have been able to accumulate some wealth and are perfectly sure that theirs is the ideal way of dairying. In more recent years they have done exceptionally well, for with widespread demand for dairy cows with little regard to production so long as they would milk, they have been able to dispose of many thousand head, at a far greater price than their production would warrant.

"Will there be a reaction in that district? was a question we later asked both a large dealer in dairy cows and also a dealer in dairy products.

"To tell you the truth there aren't a hundred cows in that district, that I would pay the freight out on for my own use; and now since we have other more progressive districts to draw from it will only be a short time, until the section mentioned will see the money loss from maintaining scrub stuff. Not only will their market for cattle be at an end, but the evident reduction in butterfat prices will cause many of them to sustain actual losses after each years work."

Quite the opposite condition to this, exists in another district, located not far from the first one. In this second section dairying has been extensive only the past seven years, but instead of being satisfied with scrub stock, which they used at first, some being shipped from the first mentioned section a large percentage of the dairymen have been using purebred bulls.

Through this, and proper selection, the cream checks have increased materially. Aside from that fact, however, when a buyer in some other part of the State wants to buy cows, his first break is for this newer section; that is, if he considers quality, which most do nowadays. The result of this has been that cows from this new section will bring \$15 per head upward more than those from the first mentioned section.

Without considering at all the increased butterfat revenue from the two

kinds of cows, the comparison seems to show that the pivot point of successful dairying is good bulls and plenty of them.

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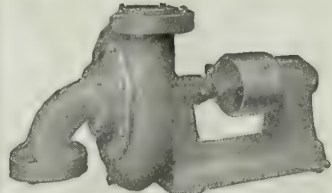
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Bean and Beet By-Products for Horses.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

In a large majority of cases where mechanical power has replaced horse power in farm operations the question of cheap fuel for the tractor and high feed prices for the horse has been the deciding factor in favor of the former.

Aside from the traction difficulties the big issue for the engineers to solve has been engine construction in order that distillate or other cheap by-products might be used and, as we now know, these difficulties have been overcome.

On the other hand the horse has not as a rule had the advantage of cheap by-products for feed but has required the best of grain and hay at increasing quotations. For this reason many large farmers have resorted to mechanical power, not because they preferred it but because it was good business to do so.

The proposition confronting the Patterson Ranch Company, at Oxnard was different from that of grain farmers however, as much of the work of cultivating lima beans and beets could be more effectively done with horses and the by-product phase of the engine builders also applied to horses on this ranch, for with bean straw and residue

molasses the ordinary ration of grain hay and barley could be materially reduced.

As from 300 to 500 head of work stock is necessary in doing the work on the 5000 acres the feeding of hay and barley alone amounted to a great deal in dollars and cents for the year.

Bean straw was a fairly good substitute but like alfalfa was rich in protein. Molasses on the other hand supplied what was lacking in the straw so by combining the two, about 80% bean straw and 20% molasses, the ration became about right.

For five years experiments have been carried on with these feeds and quite recently a large mill was erected that cuts the hay and mixes it with molasses, steam being used to make it thoroughly saturated.

It is sacked immediately after the mixing process and stored in that manner in a warehouse.

In feeding the ration of grain and hay is reduced 50% and the bean straw mixture substituted and in this way about \$5000 a year is being saved in the feed bill and the stock is kept in fine condition.

It is true that few farmers have the bean straw or molasses to enable them to feed in this way but it is safe to say that if as much attention were directed toward economical horse feeding rations as the manufacturers have with cheap fuel the mechanical power would not be so menacing as some seem to believe.

A WELL FITTED HORSE-COLLAR PAYS.

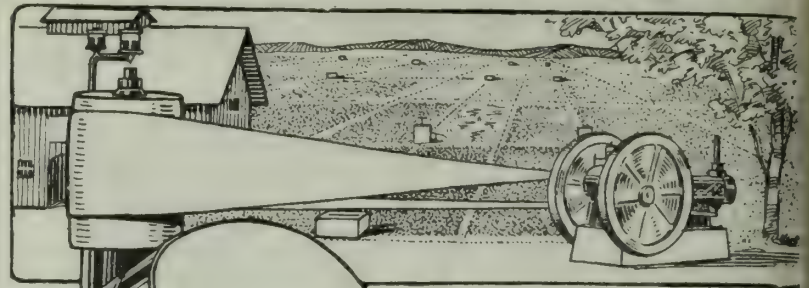
[Written for the PACIFIC RURAL PRESS by W. D. GUTHRIE.]

The writer has noticed in his visits amongst the farmers a great many horses that were being worked in collars that didn't fit. Most of them were too big, but once in a while a horse would be seen wearing a collar that seemed almost to choke him. Now we all know that in order to secure the greatest amount of energy out of any horse we must see that the harness fits and does not rub and irritate him in any way.

Now of all parts of the harness the collar is the most important. It should fit snug up against the side of his neck and should be long enough so when he is pulling you can slip your hand under the neck between it and the collar. This insures no choking or extra pulling down on the top of the neck thus making that part sore.

The harness should be adjusted to the collar and kept tight. Otherwise the collar will gradually lose its shape and the load will come on the wrong place on the horse's shoulder and lumps will form or perhaps you will sweeney him. It is a good plan, after you have worked the horse half an hour, to tighten the harness again.

Every time the harness is taken off, the collar should be rubbed clean, using a piece of burlap. This keeps the face in much better shape than where a knife is used. Also every hour during the day you should go to the horse's head, remove the mane from under the collar and rub off the sweat and dirt from both the shoulder and collar. This takes a little time, of course, but you know how



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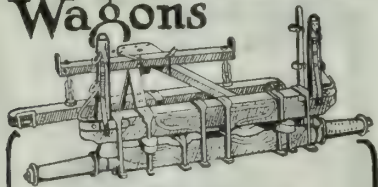
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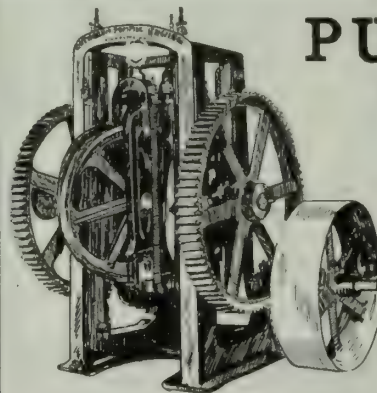
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it feels to have a little dirt or sand in your shoe.

The writer prefers wool-faced half-sweeny collars above all others. They cost more than the regular shape, but are neater looking and are not nearly so likely to sweeney your horse. The wool face makes a much softer pad for the shoulder than the old straw-faced collar.

Sweat pads are too hot to use in the summer. They cause galls, the hair gets sweaty and forms in hard lumps, and the cloth wears out and the pad must be thrown away.

Considering all this, we think you will find the best collar money will buy is the cheapest in the long run.

The horse throwing his weight against a good, clean, well fitted collar will do his work better and much more willingly; and so you will find yourself many times repaid for the time spent keeping the collar in shape.

HANDY CURE FOR COLIC.

A simple remedy for colic which has never failed in the experience of William D. Guthrie is made as follows:

Mix 2 tablespoonfuls of common ginger; 1 tablespoonful of baking soda; and 1 pound of epsom salts. Dissolve in 1 quart of warm water. Use a long-necked bottle to drench.

Rhubarb and Hogs for Profit.

Written for the PACIFIC RURAL PRESS
by J. C. Locktis.]

It often happens in farming operations that the side issue at the start later develops into a good-sized business by itself, and that has been the experience of C. R. Hanna, of Riverside.

When Mr. Hanna purchased his 60-acre ranch, five years ago, he intended to plant most of it to walnuts and peaches, but while the trees were growing he decided to plant out some winter crimson rhubarb and start a small pure-bred herd of Poland-China hogs.

Five acres were planted to rhubarb four years ago, and in a short time were producing marketable rhubarb. The first year an attempt was made to sell it in Los Angeles, but the results were very unsatisfactory, as prices were poor. Accordingly, plans were made to find other markets, and by communicating with San Francisco commission merchants it was found that prices there were higher. Since that time the entire crop has been shipped to that market, care being taken to grade the rhubarb and pack it uniformly. In this way the market for Hanna rhubarb is always greater than the supply. Since the new market was found, an average of \$300 per acre per year has been realized from that part of the ranch.

Although the rhubarb has done well, the hogs have done even better, considering the investment. The start with hogs was made three years ago when two registered sows and a boar were purchased in the East and shipped out. At first it was only intended to keep a few head, but they were to be extra choice ones. It was soon found, however, that the market for pure-bred stock was greater than two good sows could produce, so three more sows were raised from the litters. Even with this addition, the supply was insufficient, and now two more sows have been brought out from the East. The herd sire is Greenview range, sired by Big Orange and out of Anna Price 10th. He is a fine individual and his offspring show that they carry good breeding.

Not having any cows and very little alfalfa makes it necessary to raise such crops as rape, barley, kafir corn, and pie-melons for feed, but with these the hogs keep in good condition. Peanuts have also been found a fine hog feed. An acre or two are planted every year, and fed vines and all after being hauled to the hog lots.

While the owner has in this way been carrying on two ever-increasing side lines, the trees have also been busy growing into money. The question now is, whether the hogs and rhubarb are not alone sufficient for a comfortable living, and for that reason the owner contemplates selling a part of his acreage in order to devote more time to those branches.

BREEDERS' SALES.

DAIRY CATTLE.

The N. H. Locke Co., of Lockeford, recently sold the Jersey, Buttercup's box of L., 115745, to H. M. Coleman, of Merced.

T. J. Gilkerson, Lemoore, sold the Holstein, Stratford Segis Boy, 113644, to R. C. Lacey, Hanford.

Peter Sargenti Corcoran broke the

record prices of this district at auction of grade Holstein stock. One cow sold for \$170, another for \$57.50; the average for the whole herd of cows was \$95.70. Twenty-four young cows averaged \$126.50. Some of the old stock brought more than he paid for it four years ago.

SWINE.

M. E. Barnard sold the Duroc-Jersey boar Chief Wonder, 152501, and the sow Bonny Belle, 386156, to W. H. Beard, Marysville.

John P. Daggs, Modesto, made the following Duroc-Jersey sales: To B. D. Mason, Willits, two sows; A. E. Ketcham, Waterford, one boar; L. L. Nelson, Bryn Mawr, three sows, one boar; W. A. Schwab, Modesto, one boar; P. C. Erb, Patterson, two sows, one boar; I. C. Shorb, San Francisco, two sows; W. M. Bryn, Modesto, one boar; T. W. Carpenter, Lodi, one boar; A. S. Raynor, Le Grande, one boar; S. T. Marshall, El Centro, two boars; Chewchilla Construction Co., one boar; A. Peterson, Perris, one boar; E. G. Knight, Oak Bar, one boar; W. H. McGilveroy, Raymond, one boar; Lou Krohn, Modesto, one sow; A. M. Thompson, Visalia, two boars.

STARTING WITH HOGS.

To the Editor: I want to fatten hogs for the market. I have 50 acres 10 miles west of Petaluma. Kindly tell me when is the best time to get them and what age. What crops could I grow for them, including pasturage?—H. B., Petaluma.

COMMENTS BY CHAS. GOODMAN, OF WILLIAMS.

It seems to me that any time one has the necessary feed on hand to fatten hogs would be the proper time to buy them.

Ordinarily, a hog from 6 to 10 months old would be ready to fatten. Any grain that would yield the largest amount would be the best to plant. Corn is one of the best of fattening feeds, and if the land is suitable for the successful growing of corn, we know of nothing better.

Alfalfa, where the soil and climate are suitable, is no doubt the best pasture. But alfalfa is not a hog fat-

tener, in spite of all the advertising done by parties that have land to sell under some irrigation canals.

It takes grain or some other feed that contains a large percentage of what is known as carbohydrates to produce fat. Sugar is a great fattener, and possibly some by-product of the sugar factory would be excellent.

One must study the conditions under which he is operating and work out these things for himself to a great extent.

A boy crated and shipped as live stock was the discovery made by a veterinary surgeon in Lincoln, Nebras-

ka recently, when he was called upon to inspect a carload of goods billed from Bertrand, Neb., to Burke, S. D. The way-bill on the shipment included household goods and "one hog, value released at \$10." Being an interstate shipment, inspection was required. The veterinary found the household goods, but no sign of a hog. A careful search, however, revealed a boy curled up in a crate in a corner of the car, none the worse for his trip. By billing the car as part live stock the shipper is allowed the low rate on the household goods, and in the absence of a hog the boy was sent by the shipper as a substitute.

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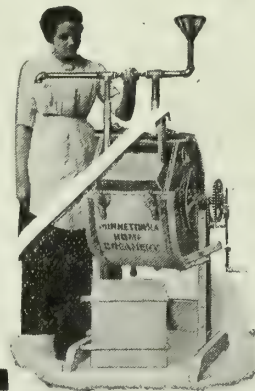
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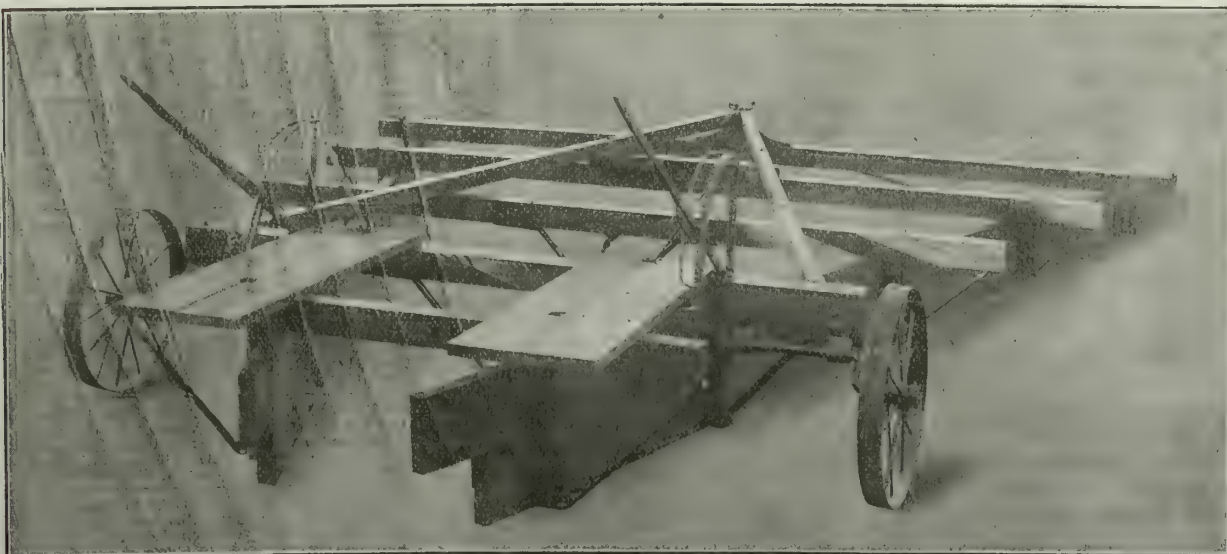


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Caring for the Chicks.

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

Last week we left the chicks at a very early age and lest some might think that was all the care they needed, and are inclined to leave the chicks to rustle, we are taking up the cudgels this week in the chicks' defense. A certain amount of rustling is good for all young animals, children included, but if you want to make a profit on poultry don't let the rustle be too prolonged at any one time, and especially in the chick stage.

While chicks are very young it is not well to feed too much rolled oats, as they are laxative, and often cause chicks to get clogged at the vent. In case this happens, and you will easily know by the peculiar cry or whistle the chick gives when the passage is clogged up, the vent can be cleaned off by scraping with a little smooth stick, or by washing with water for that matter. After washing, dry the dry the chick and smear a little grease over the parts so it won't stick again. Nearly all cases of so-called diarrhoea come from chill, wrong feeding, or some form of mismanagement in general.

With so much rain in winter, chicks that are fed outdoors must be watched to see that none of the feed gets wet and soured, because sour feed is worse than a pestilence to little chicks. It causes the worst form of diarrhoea and it can very rarely be cured unless the chicks can be moved to fresh land. That is the safest and quickest way to cure chicks that have eaten soured feed, also place charcoal handy and boil all the water the chicks drink until they are entirely well. I have some chicks a month old running out in all the stormy weather we have had lately, they were only given just what they could eat up right away, there was nothing left around to sour and they are as husky and bright as can be. When the rain commenced all mash feed was taken away and just straight dry chick feed given them. Of course they have all the green feed they can eat right where they run so they help themselves, and always run to meet me in a morning for the grain feed. As a special treat and preventative, I make a little warm mash in which I mix a good share of charcoal and ground oyster shell both these ingredients being great absorbers of gas and sour conditions of the intestines. If one ounce of prevention is worth a pound of cure, it certainly pays to prevent, and it only requires a little forethought to do it.

NO WOODEN DRINKING VESSELS.—Another preventative of disease in chicks is to look well after the drinking vessels. No wooden vessels should be allowed near chicks or grown fowls either, for they are a source of trouble; and the worst of it is that it takes an expert to connect the two. Only quite recently a friend brought a case of this kind to my notice. Two laying pullets sickened, later both died and a third was taken sick, and yet there was no sign of disease except that they moped a few days and ate very little when the daily feed was given. I was asked to diagnose the case, but could not see what ailed them. On going over the premises with eyes and nose on the scent for trouble, I found it in a big wooden pail. It had been a candy pail at one time, consequently sweet, but when I tipped it over and

put my nose towards it the aroma was anything but sweet. I called the boy and said, "Here is your trouble, end it with an axe by making firewood of this." He did so and has had no trouble since. Now if foul water will kill grown fowls what may we expect it to do to little chicks?

Even when galvanized iron or crocks are used they should be scalded at least once a week and it is better to put in a little disinfectant. And the same may be said of dishes that contain feed, especially mash feed; wash them out once a week and you won't lie awake nights wondering if you have done all you could for the chicks.

CAREFUL BROODING ESSENTIAL.—It is not so much how many you hatch as how many you can raise from what you do hatch. If you brood with heat it is economy to have the brooder house just about the right size for the chicks when hatched; that is have that amount of space to heat up, then have what we might call a cooling room or exercise room. After the chicks are two weeks old, they will spend most of the time in this room if it is kept well covered with litter and some chick feed in it. Exercise is the best medicine, it develops all the internal organs, aids digestion, and makes for health. Short cut alfalfa or clover is about the very best scratching material for small chicks, and it is a pleasure to watch them make it fly.

In feeding milk, don't forget that "milk breeds worms," so when mixing the mash about once a week put in a little wood ashes. Oak wood makes the best ashes for this purpose, but any other will do. This is a preventative, and must be used at least once a week if milk in any form is fed.

INTELLIGENT TREATMENT FOR LICE.—Incubator chicks are free from lice at hatching time, and if kept clean and away from old stock they can be raised so, but very few do raise them free, and the reason is the chicks getting among old stock or picking up vermin from ground the others have run on. Never put little chicks on ground that has been used for hens unless something has been grown on it, in which case it is all right. Anyway it does not cost any money, and but a little of your time to keep a lookout for lice. Generally speaking, there is but one kind that gets on little chicks and that is the head lice. They may be found around the neck, on top of the head, and along the sides of head even down to the bill. A mixture of creolin, coal oil, and olive oil, one teaspoonful of each will kill all head lice; or get five cents worth of red precipitate of lead, mix a small quantity of this with a little good lard and anoint the head and neck.

But mind while these remedies in careful hands are sure death to lice and harmless to chicks; in careless hands they are death to both. Which ever recipe you choose apply it with reason. Don't smear it on as if you were blacking a rusty stove and the more stuff you get on the better, but put it on as a real artist would paint, with a light touch, as light as possible, the vermin will get it just the same because they get inquisitive and come out to see what is going on. I almost hate to give people recipes because so many misunderstand and use them wrong.

But the real Buhach is so hard to

get now, and so many of the commercial insect powders are too strong for small chicks that I prefer these other remedies. I have used them many times and never had bad results; then again I have told others who killed theirs chicks, just because they believed that if a little was good, a lot must be better.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

ORDERS TAKEN for day-old chicks and eggs for hatching from the following breeds: White Leghorns, Buff Orpingtons, White Wyandottes, Rhode Island Reds, Black Minorcas, Barred Plymouth Rocks and Light Brahmas. All good laying stock. Eggs \$1.50 per 15. White Leghorn day-old chicks \$10 per hundred, and all other breeds \$15 per hundred. For further information address Mrs. I. H. Tuttle, Box 473, Watsonville, Cal.

BABY CHICKS all sold for season! Special on eggs for February: MacFarlane strain White Leghorn, \$1.50 per 15; \$2.50 per 30; \$6.00 per 100; \$50.00 per 1000. Owen Farm and Fishel strain White Plymouth Rocks, \$2.00 per 15; \$4.00 per 30; \$10.00 per 100. MacFarlane strain White Leghorn cockerels, \$3.00 each; \$30.00 per dozen. Ten acre plant, 15,000 square feet under roof. Address Dept 2, Newton Poultry Farm, Los Gatos, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities; \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, San Luis Obispo County, Cal.

WHITE LEGHORNS—Vigorous winter layers, selected two years by Hogan method. Mated to potent males from Walter Hogan's own prize laying stock. Eggs, \$5 per 100. High fertility; 4000 hatched here this season, over 90% fertile. **VERDE POULTRY FARM, LIVERMORE, Cal.**

OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for March, \$10; April, \$9; reduction in quantities. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

S. C. WHITE LEGHORNS—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected hens, bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. Bihn, Santa Clara Valley Hatchery, San Jose, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

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FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

BRONZE TURKEY EGGS, \$3 per setting from largest Turkey farm in Stanislaus Co. Crows Landing Turkey Farm, Box 227, Crows Landing, Cal.

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MAMMOTH BRONZE TURKEY EGGS from the largest and best stock in the West. Special prices. Geo. A. Smith, Corcoran, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BARRED ROCKS ONLY—Am booking orders for eggs and chicks for March delivery. Send for folder. G. L. Hawley, Madera, Cal.

TOULOUSE GESE EGGS—5 for \$1. Indian Runner duck eggs, 13 for \$1. F. Sewall Brown, Newark, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties. L. W. Clark, Petaluma.

LIGHT BRAHMAS. Breeding stock for sale. Eggs for hatching \$2.50 per setting. Box A. B., Pacific Rural Press.

EGGS—Buff Orpingtons, setting, \$1. Runner ducks, 75c. Glendals, Fleming Ave., San Jose, Cal.

PETALUMA BROODER STOVE, Haywards, Cal. Best on market. Latest improvements. Catalogue free.

BROODER STOVES—New; well known make. For sale cheap. Box 420, Pacific Rural Press.

FINE S. C. WHITE LEGHORN COCKERELS. Mrs. Kavanaugh Collier, Dixon, Cal.

PEACOCKS, \$10 per pair. R. D. 14, Box 516, Los Angeles, Cal.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

BELGIAN HARES. THOROUGHbred BELGIAN, with or without pedigrees. THE OLD HICKORY SUPPLY CO., Dept. 3, San Francisco, Los Angeles.

EGG LAYING CONTEST LED AL THE WAY

At the Napa Egg Laying Contest our pen finished second, 66 pen scompeting. In our own class, White Leghorns, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

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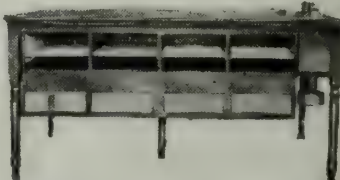
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112 E. 8th St., Los Angeles.

PROFIT IN GEESE AND DUCKS

[Written for the PACIFIC RURAL PRESS by F. SEWALL BROWN.]

Evidently the California farmers do not realize that geese are one of the most profitable species of the feathered tribes. If they did, we would hear and see more of them while traveling through the rural districts. My acquaintance with both geese and ducks dates back three years. Here are a few figures:

One gray Toulouse goose will lay 40 eggs in a season. The hatcheries paid me last season 15 cents each for all I could spare. I sold settings at the rate of five for \$1 which is a very modest price. Figure it up and you will find the profit is \$6 to \$8 per goose. My geese live half of the year on green pasture and during that time require no other food. A neighbor near by, raises a big flock each year and lets them run with the stock. He tells me that he does not feed them at all. The goslings are easy to raise and require little or no care. During Jewish and other holidays there is a good demand for young geese for table purposes. I get \$2 to \$2.50 each, dressed, and have the feathers which are worth \$1 per pound.

INDIAN RUNNER DUCKS.—In regard to the Indian Runner duck I will quote from the U. S. Farmers' Bulletin 64. "The Indian Runner is a breed of small, utility ducks noted for its egg production; and is often termed the Leghorn of the duck family. These ducks have been credited with records of more than 200 eggs each in flocks of ten. The Runners are active in

their habits, are good foragers, and on an extensive range are able to find a large proportion of their food.

No POND NEEDED.—Most people are under the impression that domestic ducks require a pond, but such is not the case. The largest duck farms in the U. S. never have water except for drinking. The vessels must be deep enough so the ducks can put their entire bills in to wash their nostrils and eyes.

DUCK EGGS ARE GOOD TO EAT.—Another false impression that many people have is that duck eggs are not good to eat. When the Indian Runners are fed on the same food as chickens it is almost impossible to detect any difference. We use duck eggs in every way that hen eggs are used and people who eat at our table never guess that they have been eating duck eggs. I have always been able to market the eggs to the same advantage as hen eggs. Am told that in the East duck eggs bring better prices and are used in hospitals when they can be procured.

FEEDING THE DUCKS.—I have a flock of 39 ducks at present and am getting nearly three dozen eggs daily. Am feeding them a wet mash morning and evening composed as follows:

Bran, 2 parts; rolled barley, 2 parts; alfalfa meal, 1 part; and cocoanut oil cake, 1 part. One pail full at each feeding. And at noon 2 quarts of wheat.

Have plenty of oyster shells and fine gravel where they can always get it. In the summer time I add a little commercial meat scraps to the mash formula, and give greens of some sort.

SOME EGG LAYERS.—Here is a record made by Mr. Thompson, a neighbor of mine with 26 ducks hatched from eggs of my flock. His ducks were hatched April 12, 1912, and laid first egg September 12, 1912. The flock laid in Sept. 72, Oct. 470, Nov. 690, Dec. 938, Jan. 468, Feb. 397, Mar. 595; total, 3630.

For these eggs he received \$126. An average of \$4.85 per duck in one year from date of hatching. On Jan. 4, 1913, Mr. Thompson moved. This set the ducks back in their records. He sold quite a number of eggs for hatching. The balance went to the grocer and the baker. His net profit on each duck was nearly \$3.

POULTRY KEEPERS DONT'S.

Professor James Dryden thus expressed his estimate of the value of mongrel fowls. He has resorted to a limited and scientific use of cross-breeding in his work of developing a new variety, but only mongrels are different considerations.

"Don't use immature stock," is the next sign displayed at the show. Both size and vitality are affected unfavorably by mating over young chickens. Vitality is an important factor in heavy egg-laying.

"Don't start too big," comes next.

No amount of knowledge and enthusiasm can make up for lack of experience, and mistakes are sure to be made in the beginning. If the beginning is on a large scale, some of these mistakes will prove very serious. Therefore, they should be made with only a few fowls. When the business has grown the mistakes can be avoided.

"Don'ts" will not conduct a profitable poultry business but the intelligent observation of these three will steer the beginner clear of some of the most disastrous, though alluring, mistakes.

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PERFECT BROODER

Has no equal.

It supplies the chicks with fresh air. Is safe, economical and reliable. Correspondence solicited.

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White Rock, Black Minorca, White, Brown and Buff Leghorn. All high-class stock. Send for booklet of prices.

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FISH MEAT MEAL FOR POULTRY

During the past few years, poultrymen have had much cause for complaint about the steady advance in price, and the almost equally steady reduction in quality, of the beef scraps, through which they derive the animal protein that is indispensable to a high egg yield. It is high egg-production that makes the big profits in the poultry business.

The manufacturers of beef scraps are not to be blamed for this condition. It is entirely due to the growing scarcity of beef throughout the country. Our population has increased right along, while our production of cattle has decreased. This has proven to be a two-edged sword as regards the poultry industry. For, as beef becomes higher, there is a greater demand for meat substitutes like eggs and poultry.

But how are we going to increase egg-production without a liberal supply of reasonably cheap meat feed for the hens?

This problem was solved in Europe many years ago, and, more recently, it has been solved in the New England States. Besides such meat waste as beef scraps, there is but one other practicable source of animal protein, and that is FISH. They have been feeding fish meat to poultry and hogs in Europe for many years, and, in our own New England States, where fish are plentiful, they have been doing the same thing for some years past. In fact, there are today three factories making fish scrap in New England, and we are informed that they can barely keep abreast of the rapidly growing demand for their product.

We started to take up the manufacture of fish meat meal about two years ago, and, after much experimental work in our factory, we finally evolved a process for the manufacture of a product which is far superior to the European fish scraps and the New England Fish Meals, of which we have seen samples.

Numerous feeding tests made with our PACIFIC PIONEER FISH MEAT-MEAL have shown a far higher egg yield than beef scraps, and in not one single instance has our product ever caused a fish flavor in the eggs or meat of birds fed on it. Furthermore, our fish meal does not cause any mortality among laying hens, nor will it kill little chicks, as beef scraps often do to a most alarming extent.

We have been handicapped during the past year, owing to the fact that our output has not been sufficient to take care of the immense demand which has sprung up for our product. However, we are pleased to announce that we have just moved into our fine new plant, where we will have unlimited manufacturing capacity, and will be able in the future to take care of any and all demands made upon us for PACIFIC PIONEER FISH MEAT MEAL.

It may sound a little strange to you at first to "feed fish to chickens," but no stranger than it sounded twenty years ago to feed "beef scraps to chickens." You will ultimately substitute PACIFIC PIONEER FISH MEAT MEAL for the beef scraps you are now using. So why not start in to do it right now?



WHY WORRY ABOUT THE HIGH PRICE AND POOR QUALITY OF "BEEF SCRAPS?" OUR FISH MEAT MEAL IS THE MOST REMARKABLE EGG-PRODUCING FOOD THAT HAS EVER BEEN OFFERED TO CALIFORNIA POULTRY RAISERS.

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Better Health
Less Mortality
Cheaper to Feed

WRITE US TODAY FOR SAMPLE, PRICES, AND LITERATURE.

Western Tallow Co.

38-42 Beale St., San Francisco, California

ABSOLUTELY NO FISH FLAVOR IN EGGS OR MEAT OF POULTRY FED ON OUR FISH MEAL.

The Home Circle.

Nan's Career.

"This bread is stale as—" Nan paused for a fit comparison, "as stale as anything," she finished, grumbly.

"And everybody knows that is very stale indeed," said Pet, laughingly. Pet's soft, gentle little laugh was ready for every occasion.

"For my part I am tired of it all—tired to death."

Pet's pale face filled with wondering surprise; was this her brave, merry sister Nan?

"Tired of what, Nansie?" she asked, gently.

"Tired of stale bread and watered milk and scrappy pieces of meat—tired of slops!" said Nan, impatiently.

Pet arose and limped slowly around the table to where Nan sat, and put her arms around her sister's neck. Pet was lame.

"Poor darling! You are just tired out with the hot weather, Nan, dear. If you did not have to support—it—it breaks my heart, Nansie, that you must pay so many doctor bills—" The gentle voice broke and the pale little face was very grave.

"Pet!"

Nan's arms were around her immediately, and she was uttering all sorts of remorseful, caressing words.

"Don't say it again, Pet! Don't ever dare to say it again. Ugh! what a nasty wretch I was!—a beast, Pet, nothing short of a beast! Don't you do the housework, baby? A mere baby doing a person's housework!" Nan's voice implied that such a thing was preposterous and unheard of, and ought not to be tolerated by the laws of any country. "I said I was a beast, Pet, please remember, a—a—obnoxious beast," ended Nan, vehemently, with utter disregard to grammar.

After ending this outburst she glared so fiercely that Pet laughed outright, and presently Nan joined her, and they both felt better.

"It shall not always be like this. I have a career before me; I feel it." Nan threw her pretty head back proudly. Pet looked at her admiringly. She firmly believed her sister capable of anything.

"I shall earn lots of money by and by—heaps of it. I shall be famous" (such a little Nan to be famous—such a round, roly-poly, ridiculous little person!) "I shall never let you work then, Pet, and we will have no end of good times."

"And John Har—" began Pet, hesitatingly, but Nan held up her finger warningly.

"Don't say it, Pet!" she said, wrathfully. "Don't you mention a certain person's name. It's a name that is not to be mentioned between us. As if I didn't hear it often enough in the office! Ugh! But there, chick, I am going to be good now, and must be off. It's late. Good-by, little conscience."

The two girls were orphans, and the \$10 a week that Nan earned as typist in the composing room of the Traveler was all the girls had to depend upon for support. Pet was lame and very delicate, and there were heavy doctor bills to pay, besides rent, provisions and clothing. It necessitated close economy. Usually Nan was the most cheery, courageous little person imaginable, but the hot weather was very wearying, and she saw Pet, who

was not quite 14, growing paler every day. If she could only take her away for a few weeks! She felt that it must be arranged some way. She adored Pet; sometimes she called her her conscience. Willful, independent Nan sadly needed a conscience. Indeed, there was a certain person who sometimes half doubted if she possessed even the faintest shadow of one of her own. This person was a great trial to Nan—so she said.

His name was John Harris, and he was the efficient foreman in the office where Nan worked, earning three times as much money as Nan did; nevertheless, he was quite too common a person for a young lady with a career before her to give a second thought. Nan told herself so a great many times, and it certainly was provoking that this audacious young man had presumed to fall in love with her. At least, Nan declared it was, and had told John Harris so a number of times. He had no right to fall in love with her, Nan insisted; but that benighted person, John Harris, failed to see it in that light.

Poor John Harris! one feels inclined to say. But John needed nobody's pity. He was a big, broad-shouldered fellow, with handsome gray eyes, that held a quiet determination, as if their owner was quite able to take care of himself and his interests. Nan knew she ought to dispose of this young man some way—settle him once for all; but, strange as it was, she hated to do so. She did enjoy teasing the big, handsome fellow. Besides, John Harris wouldn't be disposed of.

Nan found his quiet gray eyes very disturbing this morning, as, looking over the top of her case, she found them regarding her with a mixture of reproach and displeasure, mingled with something warmer, which caused her to blush, much to her disgust. She frowned severely at them.

The owner of the eyes came around beside her and coolly helped himself to type from her case to finish the piece of work he had in hand.

"So you are a full-fledged literary woman, Nan," he said, quietly.

"Eh! what?" cried Nan, a great rush of color sweeping over her pretty face. "How—how did you know?" she faltered.

"Saw your story in the Trumpet last night," said John, shortly.

Nan actually gasped. Then it was accepted! Really printed! Fame, fortune, all sorts of rosy things seemed within Nan's grasp.

"It's the veriest trash, Nan," said John Harris, severely. "I'm surprised that you would stoop to write such stuff."

Nan's pretty mouth hardened and her brown eyes flashed fire.

"Thank you," she said, with cutting sarcasm.

"You are quite welcome," replied John Harris, politely.

How fortunate that Nan's case was off to itself and out of earshot of the others. One could talk to her so comfortably. It is just possible that sly John Harris had a hand in arranging it so. One would not like to accuse him of it, and yet, as I say, it is just barely possible.

In spite of its hardness, Nan's mouth quivered slightly. She turned to that unfeeling person beside her and said, with an odd little choke:

"It is exceedingly kind of you, John Harris, to say that. Oh, very kind in-

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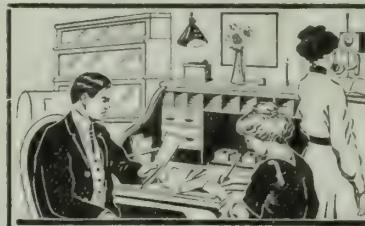
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Write for catalogue.

deed! Trash! How generous you are! It was—exceedingly kind of you to say that you despised me!"

John opened his eyes in astonishment; and no wonder, since he had said nothing of the kind.

"Why, Nan—"

But Nan would not listen, but went on indignantly:

"Why should I not write trash? Why should I not do anything short of murder, and that sort of thing—to earn money when I need it so badly?"

John's face relented a little.

"But, Nan, I'm afraid they won't pay you."

"John Harris!" cried Nan, with withering scorn, "I wish you had some sense."

"So do I," said John, soberly. But the gray eyes were twinkling. My own private opinion is that John Harris was a very patient man.

The wrath suddenly died out of Nan's face. Her anger was always short lived.

"I want to take Pet away to the country," she said, chokingly. "It is breaking my heart to see her fading every day."

Every vestige of sternness vanished from the gray eyes regarding her.

"If you would only let me help you, Nan," said John, wistfully.

"But I won't," replied Nan, promptly.

"No," said John, ruefully, "you never will take any aid from me."

"Why should I?" asked Nan, calmly, "you have no right to offer me aid, nor I to receive it."

"Is that my fault, Nan?" asked John, reproachfully.

The demon of mischief entered Nan.

"Um!" she said, thoughtfully, digging absently with her rule into the front of her case and defacing it shamefully. She evidently did not intend to commit herself.

"I am awfully fond of you, Nan," said that ridiculous John Harris.

"So I have heard you remark," replied Nan, demurely. Then she laughed the naughtiest, sweetest, most tantalizing little laugh imaginable. Any man ought to have been charmed with it. But John Harris received it with the worst possible grace, long-suffering individual though he was.

He squared his handsome shoulders and regarded her with eyes dark with wrath; gradually they softened, however, and he said ruefully:

"I don't know whether you realize

how tantalizing—how really cruel you are, Nan. Sometimes I think you do it on purpose."

Nan's face was a study, as she climbed down from her stool.

"I guess it's time to go home to dinner," she announced calmly, and she walked off with dignity, leaving John Harris standing alone and looking after her retreating figure in mingled amazement and wrath.

"Poor John!" sighed Nan on her way home. "One could almost like him if he were situated differently. If he were an editor or author, or even a reporter." That brought back her own good fortune, her own bright laurels. John Harris, indeed! "It might do well enough at present," said Nan musingly, ("Oh, very well," Nan's eyes said), "but what would it be five or six years from the present." This being an indisputable fact, Nan did not stop to argue it.

"Five or six years hence, and my sphere reduced to four or five humble rooms, ceaseless days of toil in a hot, stuffy kitchen, two or three cross, fretful babies, like as not"—Nan colored rosily—"and no end of sewing and darning and stitching—no thank you, Mr. John Harris!"

What an exaggerating young person Nan was, for she knew quite well that said John Harris had a modest little home all paid for, and a good salary on which to support a wife.

"Nan! Nan Barnes! Is that you?"

Nan turned to find a young lady of near her own age running after her.

"Why, Alice! how do you do?"

"I'm—all—right!" panted Alice, "but I just want to shake you, Nancy Barnes. Here you have just tormented Cousin John until he has finally given over all hope and has gone and got engaged to that harum-scarum Jess Wilson! Oh, Nan, how could you?"

Nan's lips whitened suddenly.

"How do you know—who told you?" she asked faintly.

"Why, Jess' sister told me with her own lips. I was so disappointed, Nan—but I have to turn off here and must postpone my scolding until another time."

Poor Nan. Her face held a strangely blank look, and her brown eyes were dilated with misery.

"Oh!" she said chokingly, "what perfidy, what baseness!" What a wicked, cruel deceiver was John Harris. Had he not that very morning, aye less than a half hour before, told

her that he was fond of her? Oh, perfidious John!

Nan almost flew along the streets, turning her steps toward the park, for she could not go home just now, and she positively could not go back to the office that afternoon and meet that unprincipled person who had broken her heart.

Reaching the park, she found a sheltered nook, and, dropping down upon a seat under the shelter of a friendly tree, she leaned her head on the back of the seat and burst into a storm of tears. But her anger was gone.

"John! dear John" she sobbed. "Oh, if you had only known. If you had only been patient with me a little longer, John—ever so little longer! But it's too late now!"

Poor Nan sobbed on bitterly, uttering many foolish, passionate words of love and regret. She said John was the best man in the world and the truest. She said he was the most long-suffering and the patientest. She said, too, that she loved him with all her heart and soul; and that she would jump at the chance of marrying him, if he were forty foremen instead of one, which was rather a startling estimate. Yes, she would be glad—oh, how glad—to marry John if he were the devil himself! (Nan had reference to that much-abused scapegoat of the printing office.) "Oh, John! John! and I loved you so much!"

A hand was laid ever so gently on Nan's head, and, starting up hastily, she saw John Harris beside her, gazing down at her in astonishment. His eyes held a repressed fire and were regarding her in passionate tenderness.

"How—how did you come to be here?" faltered Nan.

"Followed you," said John, cheerfully; but his voice was a little untidy. "Nan, was I right in thinking you said just now that you loved me?"

Nan arose and looked at him reproachfully; her face was white and miserable.

"I deserve it, John," she said, hum-

bly. "I deserve this humiliation, and yet it is not like you to be so ungenerous. You are engaged now, John; you might be kinder in your happiness."

"Engaged?" cried John, in great astonishment.

"Yes, John, you are."

"Why, Nan, you surely know that I am not. I would like to be, dear. You know that, too."

"Why—I was—told that you were engaged to Jess Wilson," said Nan, faintly.

"Then it has been arranged without my consent or knowledge," replied John, laughing.

Then he bent over her and looked searchingly into her eyes.

"You have not answered my question yet, Nan," he said, softly. "Was I right in thinking I heard you say you loved me?"

"I almost think you were, John," faltered Nan.

John's face was radiant.

"Nan, I am the happiest man alive, to know that you really care about me, my humble self, and that you would marry me, even if I were the devil himself." John's eyes twinkled mischievously. It was really too bad of him.

"Oh, John, you heard!" said Nan, faintly.

"Yes, dear, I did hear, and thank God that I did. Now, Nan, I have something to tell you. I intended coming to your house tonight. My uncle died recently and has left me a small fortune, and you shall have a charming little home, Nan, and I shall be able to give you every comfort."

"John, dear John," said Nan, "as if I cared when I have you."

An hour later, in the tiny front room of Nan's home, with Pet sitting by, radiant-eyed and overjoyed, John said earnestly:

"Don't be angry, Nan, but really I was no end cut up about that story you wrote—it was unworthy of you, dear. I wish you wouldn't do it."

"I will never write another line," John, said Nan, meekly. But she did in after years, but her work was such as John could find no fault with. "It had your name attached to it, too," John continued, regretfully. "Such a dear little name—only," said John, soberly; "I don't quite know about the last name. I believe I would change that as soon as possible, Nan."

Nan laughed and blushed.

John laughed, too, but he was quite too shameless to blush.—Womankind.

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Borax added to starch greatly increases its stiffening qualities.

Crushed on wet flannel which has been well soaped, it cleans copper like magic.

It imparts great luster to cut glass to add a little to the water when washing.

Sprinkled along carpet edges it prevents moths, and drives away ants when strewn around their paths.

When there is a suspicion that meat is not strictly fresh, wash it in a strong borax water, afterwards rinsing in clear water. If the meat is at all tainted, don't attempt disinfecting it, but consign it to the garbage pail at once. Sprinkled over meat as soon as it comes from the market, borax is a great preservative.

Add a little to the last rinsing water when shampooing the hair, if you want it very fluffy. Don't use this unless the hair is very oily, as it is too drying.

Use a little borax dissolved in water as a mouth wash.

Uses for Tissue Paper.

The tissue paper that you get parcels rolled up in should never be crumpled and thrown away, but carefully smoothed out, rolled up and laid away in some drawer or handy place where you know where to find it when you need a nice, soft, clean piece of paper.

A few drops of eau de cologne on a soft pad of tissue will give a brilliant polish to mirrors, the glass of pictures and crystal.

The pad of tissue paper with the eau de cologne is also useful for burnishing steel, rubbing grease stains off grates, or furniture, polishing silver and innumerable other things.

For packing glass, ornaments, and fine china that is not in daily use, a roll of soft tissue paper is simply invaluable.

In folding away or packing clothes for a journey, tissue paper should be generally used.

All up-standing ends of ribbons, aigrettes, and wings on millinery should have a wisp of tissue paper twisted around them to prevent crushing; and in the same way ribbon loops should be kept in position by a small pad of paper. The sleeves of dresses and blouses are the better for a paper stuffing, and a sheet of paper should be placed between the folds to prevent the material marking.

Silk handkerchiefs, mufflers, ribbons, lace, etc., should all be ironed between layers of tissue paper. Steel buckles and fancy hatpins of every kind may be cleaned with the homely polisher—tissue paper.

How We Talk.

The Nation comments amusingly on the tendency of modern fiction writers to put simplicity and directness of speech—the vernacular, in short—into the mouth of middle class folk while furnishing college professors and their kind with a many jointed vocabulary. The facts are that in real life these two groups have actually reverse habits. The people of much education and a high grade of sophistication sedulously avoid talking like a book—a thing the learned once strained tongue and imagination to do. They use short words and few, and, as the Nation puts it, would show that "high social standing goes with inarticulateness." The educated American is like to say with the brusqueness of a born Briton, "I'm quite sure we can put you up," while "Plenty of accommodations for everyone" is hospitable formula of the folk whose book learning ended with the high school. Simplicity almost to barrenness is the fetish of good form in speech nowadays, and this is reflected in much current literature, though some books commit the fault cited by the Nation. But who has full and fragrant meanings must speak them with burgeoning phrase, one would suppose.

It has elsewhere been argued, however, that the real reason for our shorthand style of talk is that everybody knows with half a word exactly what another would say. This is the explanation of brusque interruption in conversation. It is a waste of time to let your interlocutor get to the end of his sentence when you know what it is. This is offered as an excuse for the reprehensible American habit of breaking into another's discourse and the national quickness of thought is advanced as cause. In a certain family of eager-tongued Americans, all full of things to tell at every dinner hour, the one silent member of the family says: "Everybody is talking loud and all together, and the new quality of tone is all that can catch anybody's attention. So when I have anything to say, I whisper it."

"Silence on earth for the space of half an hour" one sometimes thinks would be indeed a little pattern of heaven.

Liquid Soda.

Put one pound of sal soda and one quart of water on the fire till dissolved, then cool and bottle, labeling the bottles "liquid soda." This solution makes a convenient form of sal soda for everyday use. A tablespoonful of it added to a boiler of water whitens clothes without the danger that comes from the use of crystals; also add a little to the water in which dish towels are boiled. It is very useful in cleaning all tin and ironware, and for cleaning and sweetening the sink, scrubbing tables and chairs, and for use wherever one needs a good cleaning agent. It must be remembered that it is very caustic and will injure the hands if carelessly handled, and don't use it on any painted or varnished articles, for it would destroy the finish. Javelle water for removing stains from white goods is easily made



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when one keeps liquid soda on hand, by dissolving one-fourth pound of chloride of lime in a quart of water and adding a pint of the soda. Settle and pour off the clear liquid and keep in a dark place, as it loses its strength if exposed to light and air.

Uses for Old Newspaper.

Old newspapers are excellent moth preventives. Whenever practicable they should be placed under the carpets (this saves the nail heads in wooden floors from damaging them), and woollens can safely be kept over the summer if wrapped securely in newspapers and all edges pasted down. Moths avoid the odor of printers' ink. For cleaning stoves and polishing windows newspapers have few equals, and are better than having dirty cloths hanging around, as they can be burned as soon as used.

Arthur was passing the day with his aunt. "I am going to do something to please you on your birthday," she said to the little boy, "but first I want to ask the teacher how you behave at school." "If you really want to do something to please me, said the boy, "don't ask the teacher."—Lippincott's.

It had been a hard day at the polls, says an exchange. The addition of



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over a thousand women's votes had made the counting difficult. "Well, James," said Mrs. Willicky, as her husband returned from his labors as a teller, "how did the vote go?" "902 votes for Smith, 753 for Slathers, 8 receipts for tomato ketchup, 4 wash lists, and a milliner's bill," said Willicky. "It was a mighty interesting vote."

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Our Young Folks

Last Tag.

"Link, mink, pepper, pink,
Bottle, mottle, full of ink!"
"You are out, Bessie."
"Ink, mink"—
Della was counting out, and I knew I would be "it." I do not like to be "it." I never can catch anybody. They all get their fingers crossed just as I



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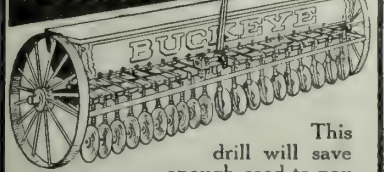
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reach them. "Last tag" is lots of fun, if you do not have to be "it." Minnie Reed is a little taller than I am; and I stepped behind her, so that Della would skip me the next time round. Fanny Holt stood next to me, and she is so shy I knew she would not say anything if she saw me. I did not get counted, and Fanny was "it." She is short and chubby, and cannot run very fast. Tag was not much fun, after all; for we did not have to run any to keep away from Fanny.

"It's too bad to make Fanny be 'it' any longer!" said Minnie Reed. "She is such a little thing, she never will catch any one. I will be 'it' now."

Fanny came up, out of breath; and she looked as though she was almost crying. The dimples came in her round cheeks when Minnie told her she would be "it." Then we had to make believe chase her, or she would have been "it" again the first thing.

Minnie could not run as fast as the rest of us, but she came so near it that we had to look out for her.

She was "it" a long time, and she did not seem to mind. When we went home to supper, I said to Minnie, "It was too bad you had to be 'it' so long."

"I wanted to," said Minnie, "for Fanny always cries, and Della gets put out and goes home, and Annie says we did not play fair, and"—

"And what do I do?" I asked. Minnie laughed. "You look injured, and do not have a good time."

I said "good-bye" then, and went into the house, but I kept thinking about our game of "Last tag."

When I woke up in the morning my white frock and lovely blue sash were hanging on a chair ready for me to put on. I did not feel as happy as I expected to. Mamma came in and helped me dress, and she asked me if my head ached. "A little," I told her. She said the fresh air would make it all right.

Mamma gave me a bunch of forget-me-nots to take in my hand, and I started off to Sunday-school. I met Fanny Holt at the square, and we went the rest of the way together.

Fanny did not have on a white frock, and she did not have any flowers. I would have given her some of mine if I had had a large bouquet; but, if I divided them, they would not show much. It was a pity Fanny had no flowers.

Farther along more girls joined us, and at the vestry door we met Minnie. Minnie did not have on a white frock, either; and she had only a few pansies in her hand. But she looked smiling and happy, and I wondered why I did not feel as Minnie looked.

Minnie put her arm around Fanny, and gave her half of her pansies, and whispered something to her.

"Why, Minnie Reed! Why did you not wear your white frock?" called out Della Fox. "She has the loveliest new frock!" said Della to the rest of us. Minnie looked back and shook her head, but did not say anything. Fanny looked up at her, but did not ask any questions. Minnie is a good friend to Fanny, and Fanny looks at her as if she thought there was nobody like her.

I wanted to sit with Minnie myself, "but, if she rather have that little Fanny." I thought, "why—I'll choose someone else."

I asked Laura Parker to sit with me. She had on a white frock, but she was beginning to outgrow it; and she had only a sprig of evergreen in her hand. I kept looking at the evergreen,

and thinking of Minnie's pansies until I was tired of it; and then I offered Laura half of my forget-me-nots.

She was so pleased! The smiles kept coming around her mouth. My head began to feel better, and I did not feel so out of sorts.

When the organ began to play, Laura whispered: "I am going to tell you a secret. Yesterday I heard Minnie ask Fanny if she was going to wear a white frock today, and she said she had no white frock to wear. 'I'll be the only one!' she said. 'Oh, no!' said Minnie. 'I am not going to wear white tomorrow.' I know she meant to until that minute."

"Minnie Reed is the queerest girl I ever saw!" I said to Laura.

"I love her!" said Laura. I loved her, too. Everybody loved her. I wondered if anybody loved me. It was better, I thought, to be Minnie in a dark frock than me in a white one.

"It is not what you wear that makes you happy," I said to Laura.

"No," said Laura. "It is what you wear it for. Mamma said it would make her happy if I would be willing to wear my old white frock, it would save her so much work. And I am glad I did it. If you do things for somebody else, you feel better than if you do things for yourself. Minnie told me that, and it's true."

On my way home I saw a little boy hunting around in the grass beside the road. "Have you lost anything?" I asked him.

"I am looking for violets," he said. "Sister is sick, and she said she should feel better if she could look at some flowers. Is it too early, do you think?" "Yet, indeed!" I told him. "Would these do?"

How he stared! "Prime!" he said. He thanked me and ran off, as if afraid I would change my mind.

Yet, it does feel better to do some things for someone else. But, no matter what I did, I kept thinking of the game of "Last Tag" we played the day before Easter. I think, if I had even worn a dark frock, I should have kept thinking of that game. When I went to bed, the last thing in my mind was

"Link, mink, pepper, pink!"

The next afternoon we met on Della's lawn. "Let us not play 'Last tag!'" said Della. "Nobody likes to be 'it.'"

"I do," said Minnie. "I do," said Fanny. "I do," said Laura.

The other girls were surprised. "I don't," I said. "But I want to play tag, and I want to be 'it' until I have caught every one of you!"

The girls clapped their hands and cheered.

"You would not do that," I said, "if you knew the reason I am so willing to be 'it.' I cheated the day before Easter. I hid behind Minnie, so Della would not count me."

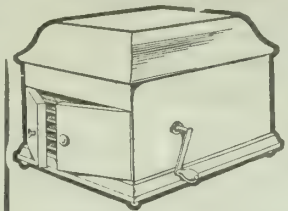
I almost cried, I was so ashamed of myself; and I would not have them see me cry for anything.

What do you think they did when they heard that? Every one of those girls came up to me and gave me a hug.

When Della came up, she whispered, "I have cheated lots of times when I have been counting out, but I am not going to any more!"

Everything goes better than it did at playtime, and I think my playmates are the loveliest girls in the world.

The dinner was given by a colored



In
The
Evening

The family is in the living room—everybody tired of reading and talking. No one feels like playing the piano. A bored listless silence fills the room. One by one they give up and go to bed.
A Victrola would solve the problem. The whole world loves music. At your command Caruso will sing—De Wolf Hopper tell side-splitting stories. You can sit back in your favorite chair and hear the soft strains of "Traumerei," the stirring martial music of "Faust" or the tempting melody of "King Chanticleer."

The machine shown is a Victrola VIII.

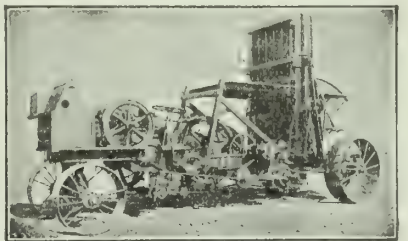
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man named Ebenezer White, and the guest of the evening was George Washington Green, chief deacon of the little church that White occasionally attended. Grace, of course, was eloquently said, and at its conclusion Mr. White began to carve the chicken. Then Deacon Green became facetious. "Brudder White," he smilingly remarked, "do dat nex' do' neighbor ob your'n keep chickens?"

"No, sah!" came the prompt response of Mr. White, as he deftly tried loose a well-roasted wing, "but he try hard 'nuff to keep 'em."—Argonaut.

The proprietor of the second-hand store was not so tidy as he might have been. One day while standing in front of the store, an Irishman approached and asked:

"Hov yez anny clean shirts in yer store?"

"Sure I have," answered the clothing man, anxious for a sale. "Lots of them, so clean as anything."

"Well," said the Irishman, moving away, "go in and put wan of them on."

Yielding Her Prerogative.

He—The hand that rocks the cradle rules the world. Don't forget that.

She—Then you come in and rule the world awhile. I'm tired.—Woman's Journal.

THE MARKETS

San Francisco, March 11, 1914.

Cereals.

WHEAT.

A little more stock is coming in from the north, and the arrivals find considerable demand. As holders in the north are asking higher prices, the local situation is quite firm, though no change has been made from last week's quotations.

California Club, cti....	\$1.60	@1.62½
Forty-fold	1.62½	@1.65
Northern Club	1.60	@1.62½
Northern Bluestem ...	1.70	@1.75
Northern Red	1.60	@1.70

BARLEY.

Increasing firmness is noted in the barley market, futures being higher, with prospect of a still further advance. Spot business here is moderately active, with prices ruling a little better than last week, though the advance is hardly quotable.

Brewing and Shipping. Nominal	
Choice Feed, per cti....	\$1.12½ @1.15
Common Feed	1.05 @1.10

OATS.

Buyers are paying little attention to oats at present, as there is no further demand for seed, and the feed grades are too high to attract much attention. Supplies are light, however, and the old quotations are steadily held.

Red Feed	\$1.50 @1.60
Seed	2.00 @2.10
Gray	Nominal
White	1.30 @1.35
Black Seed	Nominal

CORN.

The local trade is quiet, both demand and supply being light, and values stand as before.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @1.82½
Eastern White	Nominal
Egyptian	1.75 @1.85
Milo Maize	1.75 @1.80

RYE.

Ordinary offerings are steadily held at the last quotations, with no demand of any consequence.

Rye, per cti.....	\$1.45 @1.50
-------------------	--------------

BEANS.

It would appear that the recent advances in price were well justified, as the spring movement is now starting off in good shape, sending prices for blackeyes, small whites, and cranberry beans to still higher figures. Local handlers are assured of a good business for the next month or two, as the trade in most quarters is lightly supplied and consuming demand is picking up. With only moderate offerings in this market, prices are certain to continue firm, and further advances are probable. All reports on limas indicate an extremely strong market, with stocks unusually light and an active demand in the East.

(On wharf.)

Bayos, per cti.....	\$5.40 @5.65
Blackeyes	4.65 @4.75
Cranberry Beans	4.25 @4.50
Horse Beans	1.90 @2.15
Small Whites	5.00 @5.25
Large Whites	3.60 @3.75
Limas	5.30 @5.40
Pea	3.20 @3.40
Pink	3.15 @3.40
Red Kidneys	5.40 @5.60
Mexican Red	4.50 @4.80

SEEDS.

There is a little inquiry in some lines, but on the whole business in the descriptions quoted is quiet, while values are steady as for some time past.

Alfalfa	12½ @15 c
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3¾c
Canary	7 @ 7½c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

With wheat still tending upward, flour prices are firm, without further change. Northern export trade is reported quiet, but without any weakening of prices.

Cal. Family Extras ...	\$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

The hay situation is rather uninteresting at present, showing practically no change from last week. Arrivals continue rather light, as the low prices have curtailed consignment shipments to a great extent, and most of the arrivals are shipped in by dealers. The latter are anxious to clean up their stocks before the new hay comes in, and are buying very little. There is accordingly no prospect of better prices in the near future, the consuming demand remaining light. Dealers state that a large amount of hay will have to be carried over into next season, and many who are holding their old stock will doubtless cut this year's crop for grain. Alfalfa receives little attention in the local market, though there is a little export business.

No. 1 Wheat, or Wheat	
and Oats	\$13.50 @14.50
do No. 2	11.00 @13.00
Lower grades	9.00 @11.00
Tame Oats	10.00 @13.00
Wild Oats	9.00 @12.00
Alfalfa	8.00 @11.00
Stock Hay	7.00 @ 9.00
Straw, per bale.....	65 @ 90c

FEEDSTUFFS.

No further changes are noted this week, though prices in most lines are inclined to easiness, and the demand in general is limited.

Alfalfa Meal, per ton....	\$18.00 @19.00
Bran, per ton	24.00 @25.00
Oilcake Meal	34.00 @35.00
Cocoonut Cake or Meal..	27.00 @28.00
Cracked Corn	41.00 @42.00
Middlings	33.00 @34.00
Rolled Barley	24.00 @24.50
Rolled Oats	29.50 @30.50
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

Asparagus is the most prominent feature of the market at present, as arrivals are steadily increasing and local requirements are now well supplied. Good prices are reported for Eastern shipments, but the river crop is maturing rapidly, and ordinary stock is selling here as low as 3c, while some of the finest selections may bring as much as 8c. Rhubarb shows a wider range, with ordinary stock quite plentiful, though choice lots still sell at attractive figures. Lettuce has advanced sharply, Los Angeles stock being scarce, though arrivals from the river district are now increasing. Celery is still rather high, with good stock scarce, and tomatoes are too scarce to quote. Cauliflower has advanced sharply, while mushrooms are lower.

Cabbage, per cti.....	\$ 1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.....	6 @ 9c
Carrots, per sack	40 @ 50c
Green Peas, Southern, lb.	5 @ 8c
Tomatoes, Mexican, box..	Nominal
Sprouts, lb.	5 @ 7c
Celery, large, crate.....	2.00 @ 3.25
Rhubarb, lb.	6 @ 10c
Lettuce, crate	1.25 @ 2.00
Mushrooms, lb.	5 @ 10c
Asparagus, lb.	3 @ 7c

POTATOES, ONIONS, ETC.

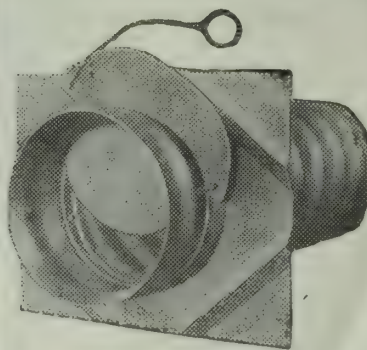
Oregon potatoes have been shaded a little, local stock standing as before, with supplies about balancing the demand. While onions are still scarce, holders are anxious to clean up some of their stock, and both Oregon and Australian varieties are lower. The best lots of garlic are a little higher.

Potatoes:	
River Whites	75c @ \$1.05
Sweet Potatoes, per cti....	1.25 @ 1.60
Oregon Burbanks	85c @ 1.25
Onions: Oregon	3.00 @ 3.25
Australian	3.50
Garlic, per lb.....	7 @ 12c
New Potatoes, lb.....	4 @ 5c

Dairy Produce.

POULTRY.

Arrivals from the East have not increased, and with continued light offerings from local points the market is pretty well cleaned up. Practically

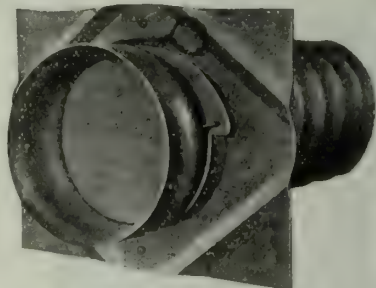


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MADE IN 8", 10", 12" AND
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THE DITCH.



By far the easiest to install or
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Does away with all trouble
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So light and simple of opera-
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of irrigating.

And **LASTING**, because made from American Ingot Iron, the purest, most even and most durable iron on the market, and having the further protection of a heavy coat of galvanizing. They cost more than wooden boxes, for the same reason that a modern highway costs more than a dirt road. And for similar reasons they are more economical in the long run.

Other types for larger diameters and heavy pressures.

California Corrugated Culvert Company

AMERICAN INGOT IRON CULVERTS, GATES,
SIPHONS AND FLUMES.

Los Angeles

and

West Berkeley

everything sells readily at the high prices quoted last week, though turkeys are easy, with more offered than the market can readily absorb.

Large Broilers	25 @30 c
Small Broilers, per lb....	30 @35 c
Fryers, per lb.....	25 @27 c
Hens, extra, per lb.....	20 @21 c
Hens, large, per lb.....	20 @21 c
Small Hens, per lb.....	20 @21 c
Young Roosters, per lb..	20 @21 c
Squabs, per doz.....	\$ 2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @21 c
do dressed, choice....	23 @25 c

BUTTER.

Prime firsts are again quoted. Prices have improved a trifle over the low level of a week ago, but arrivals are fully up to local requirements, and there is very little buying on the Exchange.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	21½	23	23	23	23
Prime						
Firsts	—	—	22½	22½	22½	22½
Firsts	21½	21½	22	22	22	22

EGGS.

Some uneasiness has been caused in the local market over the large arrivals of Chinese eggs, with reports of further large shipments to come, although it is believed that the reports are exaggerated. Except for a ¼c advance in pullets, there has been no change for the last week in local prices, receipts being ample for all requirements.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21	21	21	21	21	21
Firsts	19½	19½	19½	19½	19½	19½
Selected						
Pullets.....	19	19	19	19	19	19

CHEESE.

Prices on all lines have taken a downward turn, with liberal offerings of all descriptions. Fancy flats are 1½c lower, and Monterey cheese has dropped 2 cents.

Fancy California Flats, per lb....	15½c
New Young Americas, fancy.....	19 c
Monterey Cheese	15 @16 c

Deciduous Fruits.

Apples are moving rather slowly at present, and fancy Newtown pippins will hardly bring last week's top figure. Stocks are light, however, and prices in general are well maintained.

Apples: Newtown Pippins..	\$ 1.50 @ 2.00
Hoover	1.00 @ 1.50
Oregon Spitzenbergs ..	1.40 @ 2.25
Oregon Ben Davis.....	1.65 @ 1.85

Dried Fruits.

Quotations for offerings in the country stand as before, but most lines are so closely cleaned up that the figures are merely nominal. The market in general is decidedly firm, and according to the belief of some important factors in the trade the position of dried fruits is unusually strong. Supplies in distributors' hands seem to be light practically everywhere, and with the opening of spring has come a marked increase of inquiries. Somewhat better prices are asked for prunes, for which there is an active consuming demand, with little stock left anywhere. Apricots also are moving well in a jobbing way, with nothing left in first hands, and the scarcity in other lines is bringing more attention to peaches, which are beginning to show an upward tendency. The Associated Company reports a marked increase in the demand for raisins, and shipments are going out rapidly. This is attributed partly to the actual increase in consuming demand, and also to the fact that the Eastern trade is gaining confidence in the strength of the company's position. The New York Journal of Commerce says:

"A more healthy tone has developed in the spot market for most of the California products, and, while there have been few if any large transactions, the movement of stocks into consumption during the past few days has been freer than at any time since the end of last year. There is a particularly good demand for prunes out of store here, all sizes seeming to be

wanted by consumers, though none of them appear to be disposed to anticipate requirements. Spot stocks are limited and in comparatively few hands, with the result that the market is decidedly firm, in sympathy with advices from the Coast. These are to the effect that the market for all sizes is strong, with a rising tendency, particularly on 50s. Speculative offerings of 1914 crop Santa Claras are being made on the four-size bulk basis of 4½c for 40s to 70s and 4¼c for 40s to 90s. The trade here displays little interest, but it is reported from Chicago that buyers in that part of the country have placed orders for a considerable quantity of stock for October shipment in the first-named assortment.

"In spot goods here, one of the most active is apricots. Supplies are light and holders few. One of the latter reports having made sales of about 5000 boxes within the past few days at full prices. The general quotations at the close were 14½c for choice, 15c for extra choice, and 15½c for fancy. Advices from the Coast by wire estimate the holdings of apricots there at not more than five or six cars.

"Peaches are moving quite freely in a jobbing way and the tone of the market here and on the Coast is hardening.

"A little more inquiry is noted for seeded raisins, and a fair business is being done in the seedless varieties. The market has a stronger undertone because of the limited holdings of jobbers and the close clean-up of Coast stocks outside of the Associated."

Evap. Apples, 1913	6½@ 8
Apricots, 1913	10 @13
Flgs: White	Nominal
Black	Nominal
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6
Peaches	4 c
Pears	6 @ 7
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits.

The Eastern auctions have been paying much better prices for citrus fruits during the past week. The demand is good, the stock from Florida is not so much in the way, and from central California most of the fruit has been sold, so that the growers from south of the Tehachapi are receiving fair prices for heavy shipments of oranges. Considerable decay is reported from Eastern points, which may cause shippers to commence icing the cars earlier than usual.

On the New York auction, Monday March 9th, navels averaged from \$3.10 down to \$1.80 per box, at which time 30 cars were sold. On the same date at Boston, 23 cars of oranges sold for about the same prices as secured at New York. On the Los Angeles auction last Monday, six cars were sold, at prices averaging from \$1.37 down to \$1.05, f.o.b. California.

Shipments are running at about 200 cars per day. Up to March 8th there had been sent out of California for the season 14,718 cars of oranges and 677 cars of lemons, as against 8404 cars of oranges and 1592 cars of lemons to the same date last season.

No change whatever has been made in local quotations this week, but there is a very easy feeling in oranges, as arrivals have been considerably in excess of requirements. The demand for all citrus fruits is rather light at present.

Oranges: Navels	\$ 1.00@ 2.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless	1.25@ 2.50
Lemons	1.75@ 3.50
Limes	5.50@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Most lines are altogether nominal, everything but a few off-grade walnuts being cleaned up. Reports so far received from almond districts indicate favorable conditions for a large crop, but it is too early to make predictions.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15½c

Languedoc	15½c
Hardshells	7
Walnuts, new crop:	
No. 1 Softshell	16
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Local buyes are giving little attention to spot offerings, but supplies are pretty well sold out and prices are steadily held. No large movement is expected until the new crop begins to arrive.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESSWAX.

There has been no movement of importance in the local market, as little has been offered, but it is reported that a large amount is to be shipped East from northern California.

Light	30 @31 c
Dark	28 @29 c

HOPS.

A good-sized sale of Sonoma hops is reported at 17c, and numerous contracts for the coming crop are reported within the range quoted, there is apparently some disposition among both buyers and sellers to close transactions in advance.

1913 crop	15 @17 c
1914 crop	14 @16 c

Live Stock.

Quite a lot of sheep are now being marketed from the southern San Joaquin district, and a good many beef cattle are also appearing, though prices in these lines are well maintained locally. Offerings of hogs are light, and prices for all weights show a slight advance.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Helpers: No. 1	6¼@ 6½c
No. 2	5¾@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	8¼@ 8½c
Medium	8 @ 8¼c
Heavy	6½@ 7½c
Hogs: Grain-fed, heavy	8 @ 8¼c
150 to 250 lbs.	8¾@ 9 c
100 to 150 lbs.	8½@ 8¾c
Prime Wethers	5½@ 5¾c
Ewes	4½@ 5 c
Lambs	6½@ 7 c
Milk Lambs	8 @ 8½c

DRESSED MEATS.

Steers	12 @12½c
Helpers	11½@12 c
Veal, large	12 @13 c
Small	13½@14½c
Mutton: Wethers	11 @11½c
Ewes	10 @10½c
Suckling Lambs	13 @13½c
Dressed Hogs	13½@14 c

HIDES.

Values are well maintained at about the former level, with only moderate offerings coming out, and sufficient demand to prevent any accumulation of supplies.

Heavy Steers, over 56 lbs	15 c
Medium	14½c
Light Steers, under 48 lbs	14½c
Heavy Cows, over 50 lbs.	14½c
Light Cows, 30 to 50 lbs.	13½@14½c
Kip	14½@15½c
Veal	17½@18½c
Calf	17½@18½c

Dry—	
Dry Hides	25½@26½c
Dry Kip, 10 to 15	24½@25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c

WOOL.

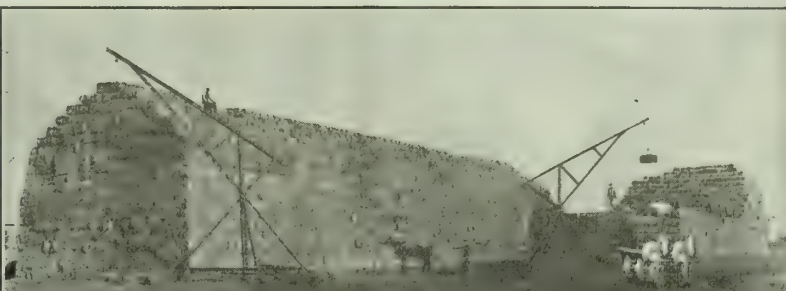
The spring clip is now beginning in several districts, and some sales are reported in the San Joaquin at the range quoted below, though values on the spring clip are not yet very well established. The fall clip is now well cleaned up.

Spring clip:	
San Joaquin	10 @13 c
Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HORSES.

For the first time in several weeks outside shippers have sent in several large lots of horses to the city market, the offerings including an attrac-

The Best Way to Handle Loose or Baled Hay



THE WORLD'S LARGEST HAY STACK, 2700 TONS
THIS HAY PUT UP BY
SCHMEISER IMPROVED PORTABLE AUTOMATIC DERRICK
IN CALIFORNIA
"THE SCHMEISER WAY MAKES THE FARM PAY"

IT WILL SOON BE HAYING TIME AGAIN

The Schmeiser Derrick is used by all modern farmers, and will handle loose or baled hay in the easiest, quickest and most economical manner known. It is always ready, is portable and can be moved about as easily as a farm wagon. Has great lifting capacity, and is invaluable for hoisting machinery, timbers or heavy loads of any kind.

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SPRUCE BOXES LUMBER

FRUIT, CANNERY, BUTTER
AND ALL OTHER KINDS

PACIFIC BOX FACTORY

353 BEACH ST. SAN FRANCISCO, CALIF.
OPERATING OWN LOGGING CAMPS AND MILLS

tive lot of chunks and drafters, with some lighter weights. Local buyers are taking a little more interest, and prices on the more desirable animals are pretty well up to the old quotations. With the advance of spring and the absence of the former large supplies of old city stock, and other depressing factors, some activity is expected in the local trade from now on.

Heavy drafters, 1700 lbs. and over \$275@325
Light Drafters, 1500 to 1650. 225@250
Chunks, 1350 to 1500..... 200@225
Wagon Horses, 1250 to 1350.. 150@200
Delivery Horses, 1050 to 1250 100@125
Desirable Farm Mares..... 75@100

MULES.

1200 lbs.	\$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

"Maize: Its History, Cultivation, Handling, and Uses," by Joseph Burt-Davy, F.L.S., is a very handsome book, containing over 800 pages, which has just been issued by Longmans, Green & Co., Fourth Avenue, New York. Professor Davy will be remembered as formerly connected with the State Agricultural College. He left California about ten years ago to take up work with the Department of Agriculture, Union of South Africa. This book on corn is the result of great research and experimental work with all varieties, and is probably the most complete and authentic of any work on the subject published. The book is profusely illustrated, well bound, and sells for \$7.50 per copy net. Address the publishers at New York.

Sales on our new book, "One Thousand Questions in California Agriculture Answered," are fully up to expectations. The book was issued December 18th last, and to date we have sent out nearly 1500 copies. The book

is very valuable to every farmer, contains nearly 300 pages, cloth bound, and sells for \$1.50 per copy, postpaid. Every subscriber is urged to write us for special offer.

ADVANTAGES OF BUYING NURSERY STOCK FROM RELIABLE CONCERN.

Every once in a while we see in the press notice of some planter who has been grossly deceived by an unscrupulous nurseryman, one of the most recent cases to come to light being that of a man in Ohio who bought a lot of nursery stock from a nursery in his State, and who is now suing the nursery for redress, as reported in a recent issue of the Orange Judd Farmer. Apparently the trees sold were nothing else than a lot of seedlings, and the purchaser certainly should be able to obtain redress in any court. Among California nurserymen who guard the value of their stock, is the Fancher Creek Nursery of Fresno, established by George C. Roeding in 1884 and which has now developed an enormous business, not only in California but all over the West. In fact they have a very large trade established in several foreign countries like Japan, South Africa, Hawaiian Islands, etc. There are, of course, other reliable nursery concerns who can be depended upon to supply only stock of very finest quality and which will grow true to name, but the prosperous planter cannot be too carefully warned against the folly of buying from unknown or unreliable growers and taking chances with stock which, while it may look fairly good when he plants it, may, after many dollars in labor and time have been spent upon it, prove to be worthless.

The Pacific Box Factory has an announcement on our market pages. This is the largest concern in California dealing in all kinds of packing cases. Here is an opportunity for our readers to buy direct from manufacturers.



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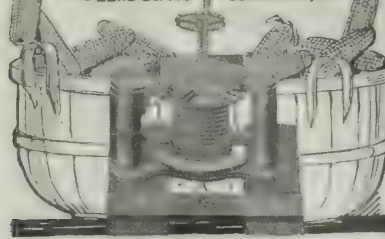
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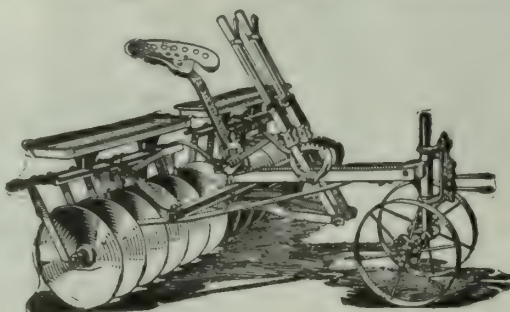
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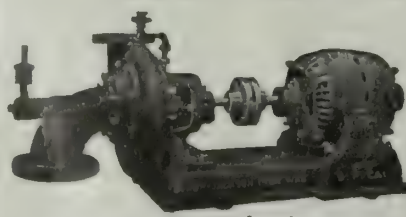
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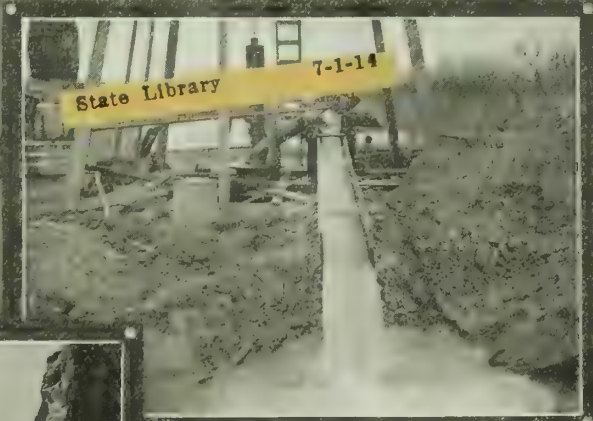
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The Bean Spray Pump Co., known throughout the fruit-growing world for its highgrade hand and power sprayers, now offers a line of centrifugal pumps and direct connected outfits that the company guarantees in the same comprehensive way as its spraying machines, and which the company considers as of equal merit in its particular field as the spray outfits are in theirs. We have no hesitancy in putting the Bean guarantee upon our irrigation machinery—and stake our reputation upon its efficiency, durability, and ease and economy of operation.



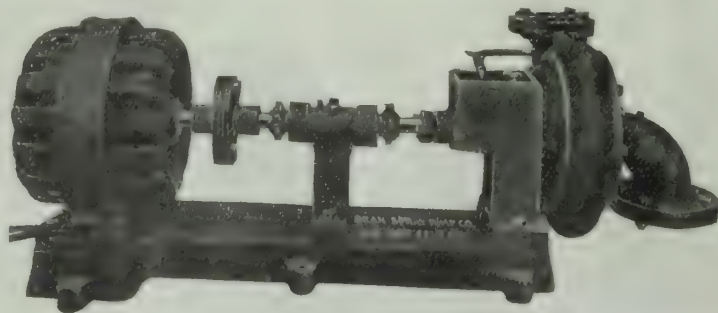
Bean Horizontal Pump Direct

CONNECTED TO BEAN GAS ENGINE

See the illustration at the right. This outfit meets the demand for a portable direct-connected pump where power lines have not been extended or where low cost of operation is desired. The engine is our famous **TWO CYLINDER OPPOSED TYPE**—formerly known as the **Ostenberg Engine**. The opposed construction practically eliminates vibration, adds long life to the engine, and makes a much lighter weight possible without sacrificing efficiency, strength, or durability. We can furnish connected outfits with engines of any horse power.

DIRECT CONNECTED PUMP AND MOTOR

The ideal unit where the head (suction and discharge lift) is fixed. Pump and motor are mounted on solid cast iron base. Our standard horizontal pump is used, with impeller or runner especially designed for the given head and volume of water. Direct connection saves power.



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Tear off the coupon, sign it, and mail at once. We want you to read the full story of these remarkable pumps. We want you to let your own judgment decide whether or not you can afford to install any other. We want you to know, too, that when you buy a Bean you buy not only a pump but a Pump Service. Our factory experts cover the entire Pacific Coast frequently and their business is to see that Bean owners get the best results from their purchases. Send the coupon now.

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Bean Spray Pump Co.

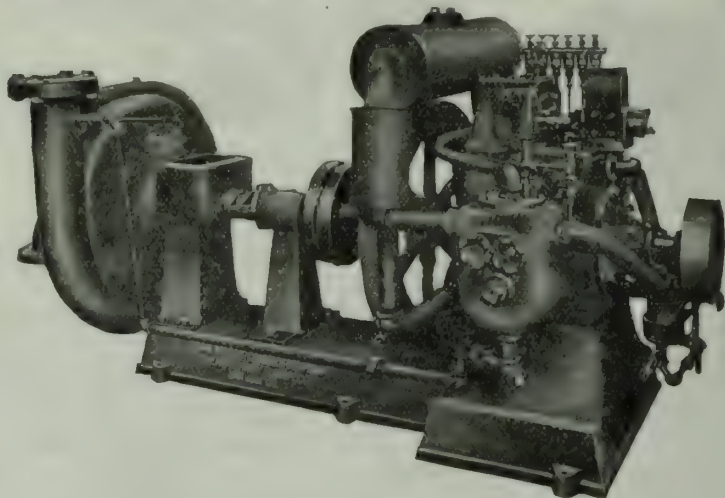
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Bean Centrifugal Pumps

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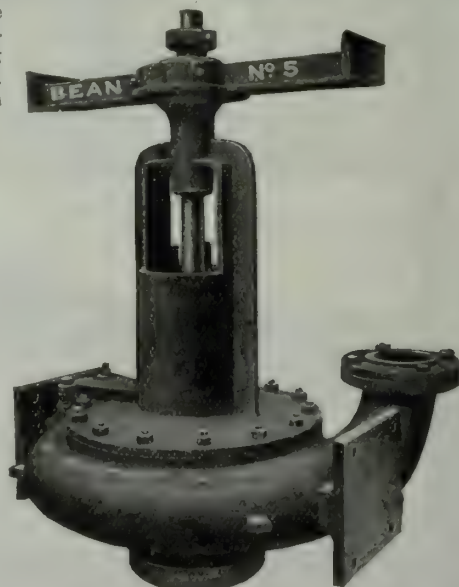
We want to call your attention to the fact, first of all, that ours is not an unknown line of pumps. For fifteen years the pumps we now manufacture under our own name were made by the Caton Foundry and Machine Co. of San Jose, and "The Caton Pump" is favorably known throughout California. For something over a year our own engineering department has been improving and bettering them, until we now offer them as absolutely the best centrifugal pumps on the market. They have many distinctive features—prominent among them being—

THE BEAN WATER-SEALED STUFFING BOX. This feature practically puts an end to stuffing box troubles. The shaft, where it enters the pump, is entirely surrounded by water, which makes a perfectly air-tight seal without excessive tightening of the stuffing-box nuts. This saves friction—power—money! The **Bean Automatic Water Balance** makes end thrust impossible; the **Enclosed Runners** greatly increase efficiency; the **Heavy Base** is not liable to spring and bind the shaft; the **Scientifically Designed Scrolls** are built to reduce friction to a minimum. But we cannot enumerate all the advantages—send for catalog and read the detailed description.



Bean Vertical Pumps

The Bean Vertical Centrifugal Pump is the result of years of study and practical field experience in a district that has more vertical irrigating pumps in use than any other similar district anywhere. These pumps are operating under all conditions in pits from ten to a hundred and fifty feet deep. The **Automatic Water Balance** is a tremendous advantage, and the accessibility of the **Open Stuffing Box** enables the operator to tighten the gland when desired without removing the packing or losing any time. Full details will be found in our catalog.



THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 12.

SAN FRANCISCO, SATURDAY, MARCH 21, 1914.

Forty-Fourth Year.

Santa Clara Valley Irrigation.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Last spring many Santa Clara fruit-growers who had put their all into small orchards faced ruin. The previous year had been exceedingly dry, and it seemed that all available moisture had been used in producing the small crop of that season and the trees had suffered for water. Young trees especially, which so particularly need to keep growing vigorously, had suffered, and their owners had made so little from the land that many were in hard straits to pay expenses and hold their orchards. But the previous year's dryness would not have been so serious had there been a normal rainfall in the winter that followed. Since that was only 6.58 inches, on the valley floor, last year went hard with many growers.

Good Effect of Dry Seasons.—But the two dry years have stimulated irrigation wonderfully, and there are now wells within reach of most of the ranches of the valley in which the water is 20 to 200 feet below the surface. Some of them went dry last year and were deepened. Especially around Santa Clara there are many artesian wells which are now flowing weakly, though in the past year they had to be pumped.

Besides the wells, ranches along the creeks irrigate by ditches from them in winter and spring, though even this could not be done the past two years until this winter.

Flood-water Irrigation.—And there are several proposed irrigation projects which would use ditches from the headwaters of Coyote, Los Gatos, Guadalupe, and other creeks.

The Coyote creek alone would irrigate most of Santa Clara valley were its winter floods reserved for use in summer, according to J. T. Brooks of the San Jose Chamber of Commerce. Such systems would benefit those who might wish to use their own wells, by raising the general water-table of the valley. A mass-meeting held at Campbell appointed a county committee to gather the facts about the project, but nothing definite has yet been done. And Mr. Brooks says he knows positively that if ample water every year is assured, there will never be a crop failure in Santa Clara valley. Of course, frost-fighting should be more developed, and insects and diseases well controlled to make this entirely true.

Until the creek flood-waters are controlled, all reliance for summer irrigation will be put in wells, most of which are pumped by electricity. Gas-engines are used to some extent, especially on those wells which are pumped by traveling engines. The artesian flow is reliable only in the low parts of the valley and in seasons of unusual rainfall.

Cultivation Saves Irrigation.—The sentiment prevails that a good

soaking from the creeks in winter or spring, in addition to the rains, may be conserved by cultivation so as to be ample until after the fruit is picked. Then an irrigation from the wells to soak the soil down to the underground moisture, and a vetch or grain cover crop to protect the soil from the heat, or cultivation to prevent evaporation, is all the orchards need. The summer irrigation, however, is expensive, since in the hot days perhaps a third of the water evaporates, especially where flood check irrigation is practiced.

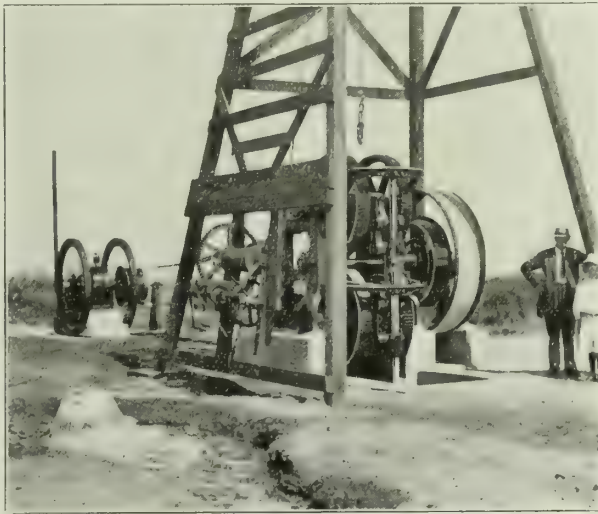
Some Individual Systems.—On one of his cherry orchards, W. C. Carlon has a well 160 feet deep. This consists of a pit dug below the usual water line and two 10-inch holes bored to the full depth. A centrifugal pump is placed at the bottom of the pit and run by a shaft which is turned by a 40-hp. gas-engine. Just now the water is 84 feet below the surface in his well. The engine is taken from place to place about the neighborhood and costs the ranchers \$1.10 per hour. Mr. Carlon paid \$365 last year to irrigate 13½ acres, besides doing all the work except pumping. This is more than his neighbors use, for he believes in not letting the trees suffer. On his four-acre home ranch he gets water from a neighbor's well. For this he paid \$90 last spring and \$113 the last of August. He uses the check flood system, having each tree in a separate square, and lets the ground soak from four to seven hours. The checks are made by plowing back furrows, and these are plowed down again shortly after the spring irrigation to dry them out ready for plowing. This was done the first week in March this year. On nearly level ground, with a head of water proportionate to the size of the orchard, furrow irrigation could be used and save much evaporation. It would take much longer, however, to soak the ground thoroughly, and it is important to get all the moisture possible into the ground at each irrigation.

R. L. Pierce has water 25 feet from the surface. With a 20-hp. motor he pumps 1000 gallons per

minute directly into head ditches on the home place, or by an underground pipe to another ranch which he works, forcing it several feet above ground at its outlet in order to run by wooden aqueducts to the highest part of the place.

Near Sunnyvale is a concrete standpipe irrigation system by which water is pumped into a concrete cylinder a little higher than the highest point on the place. Its own weight forces the water through underground pipes opening above ground at the heads of lateral ditches by means of smaller concrete cylinders in which the flow is regulated by valves.

A 140-foot well in which an open turbine pump is run by a 75-hp. electric motor, furnishes summer irrigation for F. C. Willson. The



Pomona Deep Well Pump.



20 H. P. Muncie Crude Oil Engine on O. H. McDonald Farm, Madera.

(Continued on Page 358)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

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E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Mar. 17, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maxi-mum.	Mini-mum.
Eureka	.00	28.81	35.57	60	44
Red Bluff	.00	29.67	19.74	90	50
Sacramento..	.00	18.05	15.69	82	48
S. Francisco..	.00	26.88	18.37	84	48
San Jose.....	.00	17.48	13.52	88	42
Fresno.....	.00	9.97	7.49	80	48
Independ'ce	.00	11.44	7.31	78	32
San L. Obispo	.00	29.00	16.22	86	42
Los Angeles..	.00	22.08	12.79	94	50
San Diego.....	.00	8.54	8.19	84	52

The Week.

Apparently this issue is intended to move by water power. Its contents are largely aqueous and the publisher has put a good rich mulch upon its surface, in the form of a cover-crop of enterprising advertising, so that the moisture shall not be lost before the reader gets a chance to put his harrow upon its contents. Judged by whatever measure you like, this issue is the largest helping of digestible nutrients for plant or beast, which this journal has given out in a single week. And it comes to a larger and more responsive throng of subscribers than this journal has ever enjoyed during its whole history of forty-four years! This writer does not know any more than the reader does about the mysteries of circulation which the publisher keeps locked in his safe, but he is perfectly aware from his correspondence that the PACIFIC RURAL PRESS is now reaching a multitude of wide-awake, earnest, and enthusiastic readers, the like of whom, numerically, he has never known before, and they are helping as they never did before to make such an agricultural journal as they need in their business and enjoy in their homes. This consciousness impels us to confess that, although we have had a good deal to say about motors recently, the motive power of this journal is not tractors, nor draft-horses, nor even the water power which we invoke this week, but is human and its force lies in its appeal to the sentiments, purposes, and aspirations of its constituency through its helpfulness in working and in living and in attaining higher joy and satisfaction therein. It is, however, still true that, aside from the supreme forces of human industry and character, of all the California motors, water is best.

What Is the Significance of a Good Rainfall?

The clerical prophet does not seem to be playing his spot-cards very successfully so far this month. He trumps pretty well with kings

and jacks, as the Eastern blizzards and Japanese earthquakes prove, but evidently made a poor discard while choosing his hand along the spot suit—for the State is getting dry for lack of the March rains which were promised. Still, the seasonal as compared with the normal, in the Weather Bureau table on this page shows, is in good form, and enough water has come to pull the fees out of the pockets of those who made contracts with the rain-makers—even if they should not be able to pull a crop out of the ground because of a dry springtime. But we do not expect that. It is the characteristic of years which start in generously to pull out on the same line. We have that from observation of weather-habits since pioneer times—in fact long anterior to the date at which California prophets took to the water-wagon. In those days prophets hailed from Kentucky and not from Missouri or Italy, and what they called for usually went down all right. But never mind about that now: we are all going to vote next November as to what our future line of prophetic impulse shall be.

Why is it that we usually have a good wet year after a couple of dry ones, do you suppose? Is it to assure men that the world is being run on a scheme of creative goodness and beneficence—a sort of workmen's accident compensation policy which provides a joyful morning after a night of sorrow? We rather think that high significance is in it, or should be—but that is a higher line of preaching than falls to our lot. In the matter of irrigation, for instance, one might be led to believe that the most effective way to drive people to provide water for their crops would be to keep them in parching drouth, each year drier and drier, until they really come through with the water in utter desperation. This would be like the old line of preaching that the Lord would keep lamming a man until he got repentance from the wreck of him. We doubt the doctrine both in irrigation and in salvation. It seems to us that the lesson from the contrast of good years and dry years alternating is clearly to enforce efforts to provide that all years shall be reasonably good. The Lord gives both kinds: take your choice, you capable creature, made in his image! Take your chance, if you wish to be always on the grill: choose to do something if you have force enough to share the divine attribute of regulation. The year of generous rain, after the dry years, is therefore the opportunity to insure yourself against future losses and disappointments. It is a beneficent provision, because the good year gives you the cost of insurance. This is the reason why we give especial attention to the subject of irrigation in a year when there promises to be less than ordinary need for it, perhaps. Preaching provision for irrigation when the drouth is on, is proper, of course, because many may be forehanded enough to buy themselves immediately into it, as they were last spring and summer. But preaching irrigation in a year when crops promise to come largely by rainfall is a wiser affair, because nearly everyone can do something about that. There promises to be money to spare from rain-fed products to secure some measure of assurance that coming crops shall not fail utterly from lack of rain. "In peace prepare for war" is an old proverb which has been damaged a little by modern reformers who are claiming that peace is on the side of the heaviest battalions—therefore, in peace pre-

pare for peace, is the new model. It is not that way with water. In rain prepare for drouth, whether it be such pumping or reservoiring or damming or ditching as you can individually undertake, or whether it be by quickened interest in irrigation laws, systems, enterprises, and the like, which are proposed as public benefits. And so we give this issue largely to irrigation, although it is distinctly not a dry year.

The Plant Should Teach.

As a whole it is, of course, true that the experience of growers supports conclusions drawn from careful experimentation on the scientific side as to the value of irrigation properly applied and to the ill effects of errors in the use of water, but it is also true that some misconception still exists among growers as to the conditions under which irrigation may be profitably resorted to. This arises in good measure from the failure on the part of many growers to fully understand the relation between the highest thrift of the plant and the quantity and quality of its product. If the grower should know the plant better, he could learn from it what his policy should be in its treatment. Growers generally are more apt to endeavor to learn from rainfall tables, temperature tables, soil analyses, and their own conceptions of things generally, what a plant ought to do than to try to learn from the plant itself what it will do under certain circumstances and what it will also do under certain unproved circumstances. The grower's notion too often is that he is the master of the plant: the grower should be the disciple of the plant. If he will accept this attitude and learn to faithfully do his duty as a disciple, he will learn how to vastly enhance his production.

What Does Irrigation Propose?

The art of irrigation improves nature merely by assuring the plant a constant and adequate water supply which results in full development and productiveness. The highest success in the arts of production rests upon the employment of natural conditions to the best possible advantage: to ensure uniformly good growth by doing for the plant whatever insight and experience declare to be favorable and to protect it against everything of opposite character. It does not aim to produce anything which does not occur in nature, as the arts of planting and animal breeding do, but it works for uniform goodness as a substitute for the infinite variety of nature.

The Lesson of the Laurels.

In Ventura county we once saw a fine California laurel tree growing at the base of a cliff which rose from the roadway to a shrubby crest two hundred feet above it. The tree had evidently started since the cut for the road had been made and it had grown luxuriantly, carrying brighter and larger foliage than neighboring vegetation on the bank above. We were curious to know why so thrifty a tree should be found, while adjacent growths were so ill-favored. We soon found that the higher growth was also California laurel reduced to the size and aspect of the tree on dry banks and ridges. Further inspection showed that the ground at the base of the bank was moist from seepage, while above it was dry, deeply seamed by the eroding winter-water and blackened by the dead roots of plants which had been exposed to drouth and sun-

burn. It seemed quite certain that the fine tree below sprang from a seed which dropped from one of the pinched specimens above and rolled down to the ample moisture and plant food in the soil at the base. The plant above gave of its perishing life to the plant below, and the latter, because of nature's unfairness and partiality, was attaining the dimensions of its cousins living beside streams and beyond the usual development of cliff-born laurels. This was but a striking instance of what we all see—the dwarfing of the dry ridge flora contrasting with the size of plants on good slopes or bottoms; the stalwart succulence of the overflowed river lands and the plant-spindling on the dry plains; the rich floral carpets of the moist springtime and the bare floors of the dry summer months. All these are nature's doings. They may be picturesque and suggestive of high thoughts, but their variableness and their expression of irregularity in volumes and values are offensive to an industrial conception. It is nature's way, but from a producer's point of view it is not a good way and must be improved if the undertaking is to be economically profitable.

What Makes a Plant Thrive?

Among the factors determining the natural distribution of plants and determining also their thrift and profitability under cultivation, three are prominent, viz.: the soil, the temperature, and the moisture supply.

Improving nature in the soil's content of plant food is not only one of the oldest agricultural arts, but is counted an evidence of wisdom and thrift wherever the land will adequately requite the expenditure. Improving soils by reduction of plant poison, which may indeed often be plant food in excess, is in some respects very old, simple and orthodox; in others very new, elaborate and not widely reduced to practice—but soil improvement has, on the whole, passed beyond the experimental stage as to feasibility and desirability.

Improving temperatures is also a very old horticultural art which has reached wonderful application at the present day, as the thousands of acres of glass now in commercial use, the existence of regularly organized American insurance against injury by hailstorms and organized European canon-firing into approaching hail clouds will testify. Mending open-air temperatures by checking radiation from the earth surface by artificial clouds of smoke and steam is an old practice now being wonderfully extended in California, while our fruit-growers have also demonstrated the feasibility and profitability of "heating all out of doors" sufficiently to prevent frost injuries.

Irrigation Is an Old Art.

Improving natural soil moisture is also a very old art. The classic writers extol drainage and archeologists locate prehistoric irrigation canals in various parts of the earth. The very cradle of civilization was probably rocked by an undershot wheel in an irrigation ditch, and of six sites for the Garden of Eden for which the ancients contended, all were in irrigated regions. Nearly all the grains and fruits, and some even of the forage plants, which constitute the world's chief source of wealth and comfort at the present day not only made their first break from wild forms but reached high nutritive value and lusciousness in irrigated countries of Asia before history began.

Why Then Prejudice Against Irrigation?

Is it not a little strange, when one thinks of these very common observations and reflections, that there has been prevalent in the United States a prejudice against irrigation as in some sense an unfortunate recourse of misplaced or misguided men. Irrigation has been opposed, even in some parts of California, as a distressing economic burden; as a horticultural misfortune; and even as in some sense an impious recourse. In former years some localities indulged in much exultation over their ability to display products grown without irrigation, because they believed such products had less cost of production, because they were necessarily of higher quality, and because the growers were not forced to cast reflections on the wisdom of the creator by running water upon land which he had manifestly decreed should be dry. Recently, truer conceptions have prevailed on all these aspects of irrigation. Investment for irrigation is seen to be like other investments for the improvement of land and governed by the same economic laws. Irrigation is in exactly the same category with fertilization and drainage from an economic point of view. Again, irrigation has been looked upon as a misfortune because rainfall products were held to be better in quality and maintain better conditions during transportation. Of course an excess of water will result in fruit low in quality and very perishable—providing the excess does not kill the tree which would bear it—but the result would be the same whether the excess of water came from the clouds or from the ditch, though the danger from the latter source is greater. The general fact that not less than three-fourths of all the fruit which California is now selling to best advantage in the most distant markets is from irrigated trees and vines, and that sugar beets which are now largely grown by irrigation on the Pacific coast, though the idea was scouted as impossible by European authorities, is an answer to all objections to irrigation as destructive of quality.

Again, the claim that irrigation is unnatural and therefore contrary to creative design is altogether unwarranted, for is it not recorded in Genesis that the only garden which the Lord ever made upon the earth, wherever it was, was watered by a river and not by a rain cloud?

Queries and Replies.

Querists must submit full names and addresses.

Root-Pruning at Planting.

To the Editor: A neighbor of mine came around the other day while I was planting some peach trees, and said that I was not pruning the roots sufficiently. He took a tree and pruned off all the roots and rootlets except three or four of the largest ones, and these he cut back. He said the rootlets would not survive the transplanting anyhow, and only served to keep the earth from being packed well about the main roots. I pruned the roots of quite a number of trees in this way, and two weeks after planting, dug one up to see how it looked. With my very limited experience, I could see no indications of root development. As the authorities I have read say nothing much about root pruning except to cut back broken and bruised roots, I hesitate to follow the above plan without better authority. My soil is a deep, rich, sandy loam, well drained, but very retentive of moisture.—D. F. T., Patterson.

The finer roots and rootlets, which may be called threads and strings, are often worthless

and are apt to prevent soil contact from larger roots, as your neighbor says. They might better be cleared away, but, because of the work required, they are usually allowed to remain. Roots one-quarter of an inch in thickness we would not remove, and if they do not crowd each other there is no object in reducing their number if the planting and earth-pressing about them is being carefully done. Your neighbor is a little too radical, but trees will grow his way if moisture is ample. In our climate and in our soil which favor surface drying more than the humid climate, where this root-docking originated, it is better to retain longer roots in transplanting—merely making a new cut at the ends of them as they come from the nursery.

The foregoing applies to what may be called average moisture conditions at planting. If the conditions of heat and moisture are ideal, and if the rootlets have not dried during transportation, they do not die but may be first to start growth. We have just taken up a June-bud peach, planted last month, to see what it was doing, and find that the first new rootlets are starting from the string-like roots and nothing has yet put out from the larger ones. It is not true, therefore, that these strings always die, though in average handling and planting of trees they may usually do so.

The Pathos of the Feathery Bamboo.

To the Editor: Will you kindly inform me if anything can be done for bamboo hedges which are not dead, but have turned brown, as if in seed, for the past year or more? The roots are not dead, but for two years no young shoots have appeared as formerly. The hedge is about eight or ten years old, and we have been very anxious to keep it if there is any possibility of its becoming green again.—A. B., San Mateo.

Our sad experience is that when a bamboo plant blooms and tries to make seed, as you describe, that it is the end of the plant, and not only of an individual plant, but of all others which have been started by division of the roots from the same original plant. A few years ago such an original plant bloomed and died in Berkeley, and all its sister plants produced by dividing the roots, which were distributed widely over the State, never forgot their relationship, and died just as the first plant did. We heard of them dying as far away as Santa Barbara.

Fortunately, the bamboo is very slow at seeding, and there may be, therefore, a run of a good many years after the plant which starts from the seed, will undertake to bear seed itself. Of course, varieties which propagate from running roots are different; but the particularly fine, feathery bamboo which does not grow very tall but makes a great number of slim, beautiful stems, does not have running roots, and it is therefore subject to dying whenever its seed-time comes.

Botanically the bamboo is a grass and dies on seeding just as some annual and some biennial grasses do, although there are bamboos, like some grasses, which are perennial in their growth. The only way to re-establish your hedge is to begin over again with new plants, which fortunately the nurserymen are continually growing from the seed; but one does not know how long a lease of life any particular plant may really have, for with the seeding comes its death, as you have yourself experienced.

Flower-Bed Plants for Beginners.

[Written for the PACIFIC RURAL PRESS
by M. B. D.]

I have so often been in the same state of mind as your correspondent on "Planning Ornamental Planting" in the issue of February 21, every spring-time during the first few years of my gardening experience, that perhaps I can lend a helping hand. My experience has been purely personal, following out personal tastes, and therefore limited, but perhaps more workable from a beginner's point of view.

I find it an advantage to set part of my garden aside for bulbs, and part for herbaceous planting, though with several exceptions. Bulbs require different culture and can be more readily lifted at the end of their season if in a bed by themselves.

Let us consider the bulb beds first. Carl Purdy's (Ukiah) bulb catalogue gives the best cultural directions I know; follow them carefully and your bulb bed will be a joy. Friesias make a good border, or else some bedding plants such as violas or dwarf grass-pinks (*Dianthus plumarius*). I prefer the bedding plant, which blooms longer and does not have to be lifted leaving the bed entirely bare. Tulips, especially the long-stemmed varieties, such as Darwin, Gesneriana, are pretty when planted with St. Brigid anemones, the latter filling out the bed with pretty foliage. Ixias and ranunculi have stems about a foot tall, and would be pretty planted in clumps between jonquils; they bloom a month or two later. This year I have forget-me-nots just behind my jonquils, and the two make a charming effect.

Be careful to plant montbretias where you want them to be permanent and where they will not crowd other plants. I spent several years trying to get them out of a bed where they were not wanted; I even sifted the soil through my hands, but they came up again just the same. Do not fail to have irises; German, especially the Pallida species; Spanish, Japanese, and English. They can be left in the ground all year. The Spanish, English and Japanese die down, but the German always have a few soldierly leaves at attention and keep the bed green. They will do well in the shade, except perhaps the Japanese, with which I have had little experience. I leave

a few spaces among them for hardy Pompone chrysanthemums, propagated easily by cuttings, so that there is still something to look at when the bulbs die down. Their clumps may always be left when digging out bulbs.

Always keep bulb flowers cut; never let them die on the plant, as they will then often refuse to bloom next year. But the leaves must be left till they die on the bulb in order to ripen it for next year's growth. Keep bulbs in a cool dry place until ready for planting next year. I always look mine over in August and clean them thoroughly.

HERBACEOUS BEDS AND BORDERS.—Gladioli and Watsonias, though bulbs, I reserve for my herbaceous border. I begin planting seeds for that herbaceous border in June and July, in boxes. That gives me flowers on the hollyhocks, foxgloves, campanulas and many other biennials, the following summer.

If you can very thoroughly enrich the soil, sweet peas may climb the fence at the back, but the soil would then be too rich for hollyhocks; so I think peas are better by themselves, trained over wire netting. Hollyhocks grow 8 to 10 feet high and make a grand background—then should come Salpiglossis, Scabiosa, and cornflowers (*Centaurea cyanus*)—the colors are all harmonious. The first two are 4 to 5 feet, the cornflowers about 3 feet high. Campanulas, cup and saucer varieties, are lovely in groups and also grow about 3 feet; in front of them come asters, sweet williams (*Dianthus barbatus*), and stocks, especially Beauty of Nice, a delicate pink, which I have had in bloom from April to December.

For the border, grass pinks are fragrant and spicy, especially the white, the seed of which I have found only at Hallawell's, San Francisco. Pansies, forget-me-nots (*Myosotis*), or mignonne are all pretty for the border; and can be gathered, too. Watsonia bulbs may be planted just in front of hollyhocks; they grow nearly 6 feet, are pure white like a Madonna lily. Gladioli (*Blushing Bride* for early summer and the great hybrids for later bloom) may be planted in groups in the space between asters and cornflowers.

To my mind, there should always be a bed of dahlias planted in March; they bloom from June till November. Gaillardias are fine in a bed by themselves; in a sunny situation they will bloom most of the year. Foxgloves and campanulas will do well in shady places, always more or less of a problem; also *Primula vulgaris* for the border.

This, you will see, is a very limited list of plants, but I found it well to begin with a few and learn their characters well, then add one or two new ones each year. The packets in which the seeds come generally give good directions for planting.

None of the above named are difficult to raise, though all plants are like children and must not be neglected. "Gardening in California," by John McLaren, gave me the best information I have gained from books. It is written clearly and tells what the beginner wants to know. I hope this letter may help some of your readers, even if it does not directly answer all of Mr. Clarke's questions.

San Francisco.

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[Written for the PACIFIC RURAL PRESS
by R. E. HODGES.]

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the waterline by 70 feet of planked 3x5 foot tunnels, the water thrown at the rate of 1000 gallons per minute by means of a Jackson centrifugal pump 56 feet deep in one of the pits, the power furnished by a 40 hp. motor, Manager L. F. Graham irrigates the J. H. Flickinger Fruit Co.'s 250-acre orchard. The wells were deepened this season because the water dropped four feet below suction last fall. A suction pipe now reaches 60 feet below the bottom of the pit in order to get only water from which all the air is surely removed. Mr. Graham claims that surface water contains much air which interferes with the pump. The water has risen 16 feet since the pits were deepened due to the past winter's rains, and is now 112 feet deep.

CONSTRUCTING THE PITS.—The pits were dug by hand, not requiring dynamite, and are curbed horizontally with 2-inch lumber. The first curbings rotted from the back and looked sound from the inside of the pit till only a thin shell was left. This apparent soundness of rotted curbing is what allows many wells to cave in. All curbing used by Mr. Graham since the first has been the best quality of lumber soaked ten minutes to half an hour depending on its dryness, in a tank of coal tar heated by a steam coil through the tank. It is braced across the narrow way by 4x6 timbers each about four feet long and four feet above the other butting against vertical plank resting against the curbing. Eight-foot 4x6's are used ten or twelve feet above the ones lower down to brace the curbing the other way. With such equipment it will be many years before extensive repairs are needed.

HOW AND WHEN IRRIGATED.—It requires nearly two months of continuous pumping during daylight hours to irrigate the whole orchard. Flood irrigation is practiced and the ground is so level that no dikes are required. Ditches take the water from the well to the various points of distribution. Stand piping would be too expensive and the standpipes would be in the way.

The first irrigation comes any time in the winter from two ditches which take water from Penetencia Creek, 10,000 gallons per minute using the same distribution ditches as are used in summer. Then the whole place is plowed; and if there is time to cross-plow it, Mr. Graham feels that no irrigation will be needed until after the fruit is off. Heretofore, he has been giving another irrigation six or eight weeks before the fruit ripens.

Irrigating two weeks before ripening doesn't go on this ranch as on many others, because the fruit is all canned on the place; and the swelling caused by such late irrigation is mostly water, making the fruit mushy and diluting the flavor. No cover crop is planted since weeds furnish abundant humus and the soil is full of nitrogen.

HANDY MOTOR.—Electricity is contracted by the kilowatt, the motor requires little attention. A man working in the cannery jumps on his wheel two or three times a day and in twenty minutes sees that everything is all right. The motor is lubricated not more than once in three months. If the power should be shut off or the pump stop for any other reason, an electric bell tells the manager in his office.

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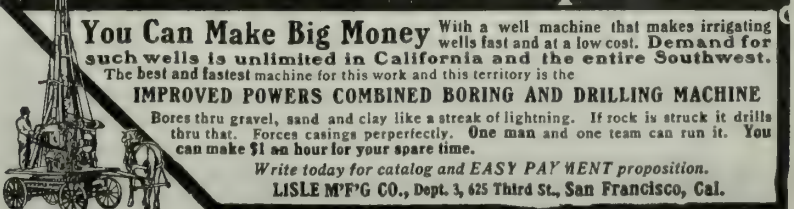
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SANTA CLARA VALLEY IRRIGATION.

(Continued From Page 353.)

trouble with this is that the least he can use the electricity for is \$6 per horse-power, and he does not use that much. In the winter he could throw a 1500-gallon stream from the creek for \$1 an hour.

A 200-foot well in the edge of the foothills south of Mountain View went dry last season, and the owner will attempt this season to get artesian water.

FORMING AN IRRIGATION DISTRICT.—On account of the expense of wells and their likelihood of failure, especially when the whole valley becomes irrigated from them, and on account of the immense waste of spring flood waters from the mountains surrounding Santa Clara valley, if the owners of damsites on the creeks will sell control reasonably, it would seem by all odds the wise and only wise course for the valley to form an organized irrigation district and protect themselves from possible future dry seasons.

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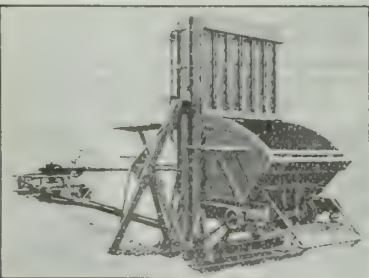
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THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

IRRIGATING MARKET GARDENS.

[Written for the PACIFIC RURAL PRESS.]

An irrigating plant is a novelty in Sonoma county, yet several market gardeners have them.

Instead, however, of pumping water directly on the land, at least two of them near Santa Rosa store it in tanks.

An electric motor pumps water from a water hole of the creek into a wooden tank of several thousand gallons capacity for Joseph Imwalle. One outlet from the tank leads by a wooden flume across the upper end of one field, opening at intervals to discharge from the side as needed. Very little water is lost this way as compared with a common ditch.

Other outlets lead to other parts of the ranch, so that the tank may be filled at night and several streams distributed at once in the day time.

Many of the crops are irrigated by running the water between the rows. Onions, lettuce, etc., are in beds eight to twenty feet wide alongside of which the water runs in ditches. The irrigator dams the ditch part way across the field and then throws water over the beds by means of a washpan nailed flatwise to the end of a narrow board four or five feet long. This makes possible the regulation of the amount of water actually applied to the crop.

Celery stands in plots about 20x30 feet and each plot has a head ditch. By the time the water reaches the lower end of a row it is shut off from that row with a shovelful of dirt.

Another market gardener pipes water from a spring two miles away in the hills into a square cement tank built on the ground at the highest corner of the garden. An iron pipe carries it from the reservoir along the upper side of the garden, discharging through valves at the proper places. This supply costs nothing except renewal of the pipe when it rusts out.

Another gardener near Healdsburg raises his small vegetables in flat beds separated by dikes and all the water is turned into one at a time with a gentle flow.

GOPHERS IN DITCH BANKS.

To the Editor: I have a new ditch, raised about two feet above the ground. The gophers work in the loose dirt to such an extent that it is almost impossible to keep the water running in the ditch, owing to wash-outs. Can you suggest some way of ridding the ditch banks of gophers? Wouldn't it be advisable to sod the banks? What kind of seed would it be best to sow? Some seed that would not injure an alfalfa field by getting scattered through it.—C. R. H., Hat Creek.

[We know no way short of killing the gophers by water, gas, poison, traps, etc. Grass on the bank will make the gophers like it all the better, and we know no other plant sufficiently repellent.—EDITOR.]

ETTERSBERG NO. 80 AND ALKALI.

To the Editor: Last week I received a letter from Mr. Stanton, of Glendora, Cal., telling of the behavior of Ettersburg No. 80 strawberry on soil so alkali that other varieties perished. He says from the 12 plants he got with the PRESS he grew 2000 plants, which would indicate that No.

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It is the only wheel garden tool that can be used with one or two wheels. Does the work quickly, accurately—ten times better than the old hand hoe, shovel and rake.

It will open its own furrow, sow in continuous rows or drop in hills, cover the seed with loose soil, pack it with roller and mark the next row—all in one operation.

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Newell Mathews Company Established 1886

Implements, Wagons, Dairy Supplies, Road and Grading Machinery
LOS ANGELES—California—STOCKTON

80 must be rather vigorous in oppressive alkali. Still, we should expect it, because the beach strawberry grew in the salty dunes and where the salt spray flies on the foliage ev-

ery month in the year. This is a valuable feature that, here where we have no alkali, we thought not of.

ALBERT F. ETTER.
Briceland, Humboldt county.

Cures for Leaky Ditches.

To the Editor: Can you give me information about cementing a ditch as to the best and cheapest way and approximate cost? Should we cement the ditch throughout and if so how thick should it be, or should we make walls on each side? We need a wall about three feet high, should it be straight up four inches thick, or six or eight inches at bottom and four inches at the top?—SUBSCRIBER, Turlock.

COMMENTS BY W. J. WOODWARD.

To the Editor: I have put your question up to the engineering department of the South San Joaquin Irrigation District, who report about as follows. Side slopes of ditch should be made one and one-half horizontal to one vertical, and should be finished quite smooth. The lining should be uniform in thickness on both sides and bottom, and if protected from stock walking over it, 2½ inches in thickness is safe. If unprotected it should be 3½ to 4 inches thick.

If clean sharp coarse sand can be obtained from the ditches, probably a lining made from one part cement to four parts of this sand will be cheaper than standard concrete.

The thin lining will cost under ordinary conditions about 7c. per square foot, and the thicker lining will cost 10c. to 12c. per square foot.

Standard ditch lining consists of one part cement, three parts clean sand and six parts crushed rock or gravel, and is likely to cost one-eighth to one-fourth more than the above.

EFFECTS OF DIFFERENT LININGS ON SEEPAGE.

Prof. B. A. Etcheverry of the University of California has just published the following statement:

To prevent the seepage obtained in unlined canals, linings of different materials have been tried. Those used or experimented with are concrete, wood, oils, and clay puddle. From investigations made by the writer in 1906 for the Irrigation Investigation and the California Experiment Station, and from more recent experience on the efficiency of the different types of linings, the following results can be anticipated:

1. A good oil lining, constructed with heavy asphalt road oil, applied on the ditch sides and bed at the rate of about 3 gallons per square yard, will stop 50 to 60% of the seepage.

2. A well constructed clay puddle lining is as efficient as a good oil lining.

3. A thin cement mortar lining about 1 inch thick, made of one part cement to four of sand, will prevent 75% of the seepage.

4. A first-class concrete lining, 3 inches thick, made of one part of cement to two of sand and four of gravel, will stop 95% of the seepage.

5. A wooden lining, when new, is as efficient as a concrete lining, but after two or three years repairs and maintenance will become an important item, and by the end of eight or ten years it will necessitate complete renewal.

The cost of an oil lining where oil can be bought at California prices (about 2 cents a gallon) is about ½ cent per square foot. Cement mortar lining 1 inch thick costs about 2 to 4 cents per square foot. Cement concrete 2 inches thick costs from about

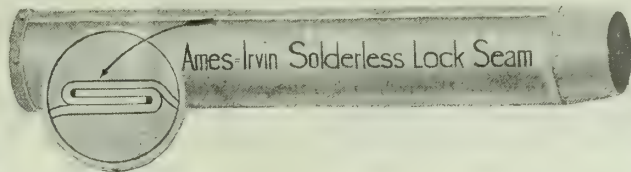
4 to 6 cents, and 3 inches thick from about 6 to 8 cents a square foot. These prices do not include the trimming and preparation of the ditch before the lining is put on, which would add from ¾ to 1½ cents per square foot. The cost of a clay lining depends greatly on the nearness of the canal to suitable clay. If clay is close at hand it can be hauled and spread on the canal, then either tramped in by cattle or worked in by dragging chains over it, at a cost of less than 1 cent per square foot, but there are localities where enough money has been spent on clay linings to pay for a good concrete lining. Wooden lining has been used in very few cases, and the cost of such a lining built of 2-inch lumber nailed on sills and side yokes will often be as much as that of a 2-inch concrete lining and not nearly as durable.

The disadvantages of the cheaper linings are the following: An oil lining stops only a part of the seepage losses, and while it will resist erosion well, it probably will not prevent the growth of weeds for more than one season unless a high velocity is used, and it will not stop the activities of burrowing animals. Oil linings have not been sufficiently tested to determine their durability. Clay puddle will not prevent the burrowing of animals and weeds grow rapidly, especially since the velocity of the water must be small in order to prevent the eroding or washing of the lining.

ADVANTAGES OF CONCRETE LINING.

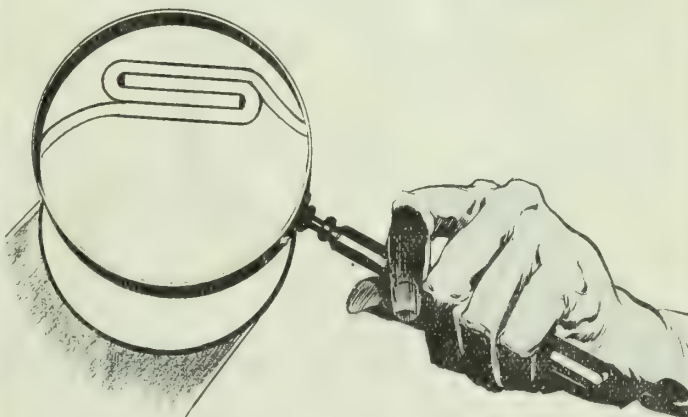
A concrete lining has none of the above disadvantages, and it meets the requirements of a good lining better than any other material. The only objection is its higher first cost. But where water is valuable its expense is well justified. In southern California the use of concrete lining dates from about 1880, when the increasing value of water made it necessary to do away with losses. Since that time practically all canals in that section have been lined with concrete, and in some cases replaced with concrete pipes. Until recently very little concrete lining had been used outside of that region, but during the last few years concrete lined canals have been constructed on many of the projects of the U. S. Reclamation Service and on numerous private projects. There are now many examples in California, Oregon, Nevada, Washington, Idaho, and other States.

The feasibility of using concrete linings will depend on the extent and value of the water loss and on the necessity for prevention of waterlogging of the land below by the seepage water. Other benefits which must be considered are the decreased cost of maintenance and operation and the greater safety. There are no weeds to contend with, no breaks to mend, and consequently the cost of patrolling is largely eliminated. It must also be remembered that a higher velocity can be given to the water in a concrete lined canal, and a smaller and better form of canal can be used, which, especially on a sidehill, will materially decrease the cost of excavation. But even when only the value of the water loss is considered, it does not require a large loss nor a very high price for water for this annual value to represent the interest and depreciation on a capital sufficient to put in a first-class concrete lining.



No Solder—No Rivets

The seam is the point where trouble is most likely to occur in irrigation pipe—where the two edges of the sheet of steel are brought together and fastened. Therefore the method by which the edges of the metal are united decides whether the pipe is good or bad.



As in any mechanical product, simple construction is *necessary* in irrigation pipe. Simplicity means strength. Ames-Irvin Lock-Seam Irrigation Pipe construction could not be more simple. Nothing but the sheet of metal itself is used. There are no rivets and no solder. There are no rivet holes in the steel. Each sheet is edged, locked together and then set down under 3500 pounds pressure. Special machinery does the work. When finished, the seam is solid, simple and strong. The union of metal is complete—without the use of other materials.

Ames-Irvin Lock-Seam Pipe won first prizes against all competitors at the Sacramento State Fair in 1913 and at Fresno and San Jose County Fairs in 1912.

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SAN FRANCISCO, CAL.

Measuring Irrigation Water.

THE MINER'S INCH.—Although the miner's inch, as commonly measured, is open to objection because of inaccuracy, from an engineer's point of

inches wide, and about 8 feet long. The opening is 1 inch wide and 50 inches long, and the distance from the top of the board to the center of the

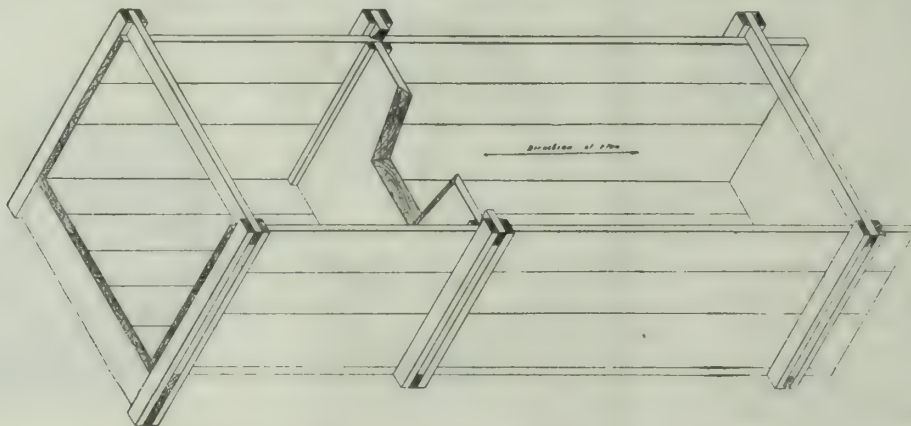


Measuring Miner's Inches.

view, it is so easily applied that it opening is exactly 4 inches on the up-must remain a popular recourse. Its stream side. On the down-stream side consists in causing the water to flow through an opening, the capacity of which is known, and which is readily stream. A sliding board is hung upon

made to slide on the beveled edges of the slot and fastened by a screw to the sliding board. When the sliding board is moved backward by means of its end, which is extended for a handle, the slot is lengthened and more water flows through.

In operation, the gate is placed in the stream so as to dam the flow completely, and the sliding board is moved backward or forward until the water is all passing through the slot, the water being kept up to the top of the board, or 4 inches above the center of the opening. The length of the opening measures the number of miner's inches of water flowing through. If the flow is too great to pass through a 1-inch opening, it may be made wider, the water still to be kept 4 inches above the center of the opening. The laws of several States provide that in devices for measuring water for sale by the miner's inch the opening shall be 6 inches high and shall be provided with a slide as shown in the picture. The number of miner's inches then discharged is



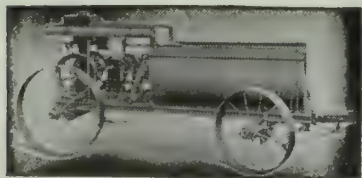
The Cipoletti Weir.

capable of adjustment to the flow in any case. A simple form of this device and its use is shown in the illustration, which represents a gate made from a board 1 inch thick, 12

the up-stream side of the first board by means of a strip screwed along its upper edge. It is wide enough to cover the opening on the up-stream side, and is held in place by a block,

equal to the number of square inches in the opening. The assumption made that the discharge is proportional to the size of the opening is not true, but the error in measuring small

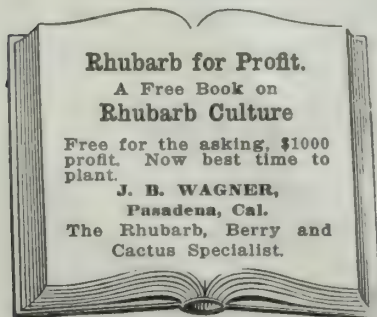
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Our buds were taken from orchards that produce almost two thousand dollars an acre. A complete line of Apples, Peaches, Apricots, Plums and all deciduous fruits and nuts.

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SOUR — SWEET — POMELO

Magnificent big stock—absolutely clean—sun-hardened plants with fine fibrous roots—expertly packed and promptly delivered. Successful nursery-men all over the State are buying from us year after year, because they can depend on us for the best at lowest prices.

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400 Bushels to
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Potatoes require a fertilizer evenly balanced as to potash and phosphoric acid, with a small percentage of nitrogen immediately available, in order to give them a quick start in the spring. We recommend for this crop our "GOLD BEAR" DIAMOND M FORMULA, which is prepared to meet the views of successful growers of potatoes. The cut on page 38 of our booklet shows potatoes which took the first prize at the Placerville Show, that were grown in a young pear orchard and were entirely fertilized with "Gold Bear" brand fertilizers. The yield was 400 bushels to the acre. The yield on the unfertilized portions of same field was not to exceed 200 bushels to the acre, which only goes to show that fertilizer is an investment and not an expense. The increased yield of potatoes not only paid for the application of more plant food to the soil than they removed, but also yielded a very handsome profit besides. The young pear trees in this field did 50 per cent better on the fertilized portion where the potatoes were grown than on the unfertilized portion.

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25 YEARS EXPERIENCE IS
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CHOICE
CLEAN
CLASSY
CITRUS TREES

All the leading varieties, buds taken from our own tested orchards. Send for Catalog and price list.

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Prunes on Myrobolan

When the selling season opened we had a very large stock of prunes of all sorts on myrobolan root. Most of them are sold now, but we can still fill orders for French (Petite d'Agen), Imperial Epineuse, Conquest, Standard and Hungarian prunes, as well as everything else found in our catalogue.

Ornamentals

Nothing will add so much to your country home as beautifying the surroundings by planting ornamental trees and plants.

We have the largest and most varied stock of ornamentals in the United States.

Send for free price list A.

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We are now ready with a first-class line of nursery stock, including the following:

APRICOTS—Good variety.

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FRENCH PRUNES—Can still furnish a few thousand.

CITRUS STOCK—The very best.

All other leading varieties of nursery stock.

Send us list of your wants and we will gladly quote you very best prices.

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Write for copy "FERTILIZER FACTS"

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quantities is not great enough to be considered. By converting miner's inches to gallons or cubic feet, the time required to fill a reservoir or cover a given field with the necessary depth of water may be determined. This unit is readily convertible into cubic feet or gallons or acre-inches of water, according to the time the water flows.

The following data will be helpful in computations: One miner's inch, as described above, equals 0.1496 gallons per second, 8.976 gallons per minute, 538.56 gallons per hour, 12,925.44 gallons per day; 0.02 cubic foot per second, 1.2 cubic feet per minute, 72 cubic feet per hour. One acre-inch of water (that is, 1 inch in depth over an acre of surface) equals 27,152 gallons, or 3630 cubic feet, and 1 miner's inch will supply this quantity in about 50.4 hours. Thus a simple calculation shows that a little stream of 5 miner's inches will supply enough water to cover an acre 2.3 inches deep in about 23 hours—a fair amount for one irrigation of soil of average character if it has not been allowed to become too dry before the application. In fact this is an average amount actually used for an irrigation of shallow-rooted plants like most field and garden crops.

WEIR MEASUREMENT.—The term "weir" is not always understood by those who use it. The term can properly be used only for structures designed to allow the water to flow over the crest with a considerable fall on the down-stream side. There are many forms of weirs, taking their names from the shape of the weir notch, or the form of crest. The triangular weir has a V-shaped notch. The rectangular weir has a horizontal crest with vertical sides. Both of these forms are good, when used by the expert irrigator or engineer who understands the principles and factors which enter into their calculations.

To avoid the variable factors which enter into the calculations for the flow of water over weirs, Cipoletti invented the form which has taken his name, and which is in general use throughout the irrigated sections of the world.

THE CIPOLETTI WEIR.—The Cipoletti weir has a thin horizontal crest, the sides of the weir notch sloping back from the vertical at an angle equal to one inch in four. This widens the stream one-half inch for each additional inch in depth. A weir having a crest length of one foot and designed for a stream eight inches deep will have a notch 16 inches wide at the top.

When the weir box is placed, care should be taken to have the crest (the bottom of the notch) exactly level. Then a point on the side of the weir box two or three feet back from the crest and level with it is marked by a nail or strip of brass for the zero point of measurement. Sometimes a stake one or two inches square is placed in the center of the weir box with its top level with the crest. A better way is to have a gage fastened to the side of the box and marked in inches or tenths of a foot beginning at the weir-crest level.

REDUCING WEIR MEASUREMENT TO GALLONS.—After allowing the water some time to attain a uniform flow, measure the depth of water, not at the crest of the weir board, but two feet back in the smooth water at the gage, nail, brass plate, or post as al-

(Continued on Page 364.)

OLIVE TREES

Manzanillo

Mission

Orange and Lemon Trees

Navel
Eureka

Valencia
Villa Franca

POMELO

Marsh's Seedless

Also considerable surplus in Figs, Peaches, Plums, Prunes, etc., etc.

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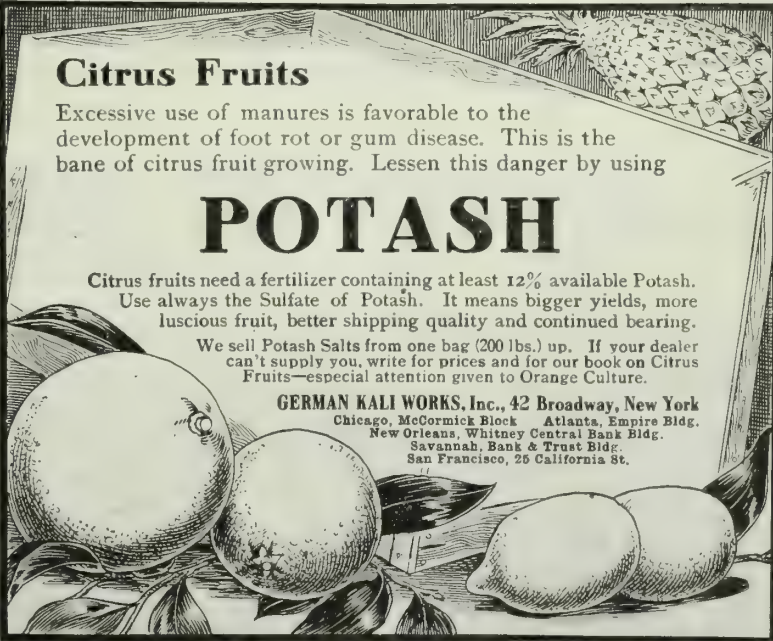
Excessive use of manures is favorable to the development of foot rot or gum disease. This is the bane of citrus fruit growing. Lessen this danger by using

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Citrus fruits need a fertilizer containing at least 12% available Potash. Use always the Sulfate of Potash. It means bigger yields, more luscious fruit, better shipping quality and continued bearing.

We sell Potash Salts from one bag (200 lbs.) up. If your dealer can't supply you, write for prices and for our book on Citrus Fruits—special attention given to Orange Culture.

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FRESH HORSE MANURE

As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

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**FLORIDA
SOUR
ORANGE**

SEED-BED STOCK
grown without shade, as are ours this season, are vastly superior to those grown under shade.

**GROWN
OUT DOORS**

They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencias, Lemons and M. S. Grapefruit. Order now.

SOUTHLAND NURSERIES, F. H. DISBROW, Proprietor,
2141 East Colorado Street, Pasadena, California.

Irrigating Alfalfa in San Joaquin.

[Written for the PACIFIC RURAL PRESS
By R. E. HODGES.]

Alfalfa irrigation in the Lodi section of San Joaquin county is entirely from wells pumped by electric motors or gas engines onto checks of approximately 10,000 square feet. Being practically level at all points, the problem is not complicated by much need of piping or elevation, and the water is within a few feet of the surface, sufficient even for the past dry years.

Twenty acres of alfalfa on the ranch of Mrs. Jas. Clausen are irrigated with what the Samson Iron Works manager considers a model plant, installed four years ago.

EQUIPMENT FOR IRRIGATION.—A 15-hp. engine making 260 revolutions per minute operates a pump with a 6-inch intake and 8-inch outlet, which discharges full. The well is 38 feet deep bored from the bottom of a 4-foot pit in which the pump stands. There is now about 30 feet of water and all through the dry seasons just past there was no sign of lack. Some days the pump was run steadily from 3 a. m. until 9 p. m., with no difference in flow.

DISTRIBUTION OF WATER.—The water for the lower part of the ranch runs directly into a concrete basin four feet square and 30 inches deep with 3-inch walls and floor whence it runs into a concrete flume 40 feet long opening at both ends into dirt ditches.

For the higher side of the ranch the water from the pump is turned into a wooden flume made of 1 by 12 inches, about 2 feet higher than the other and

run about 250 feet to a concrete basin. From this, it flows on one side into a dirt ditch which has washed out where the water drops into it and will be lined with concrete for a few feet.

On the other side, the water continues in the flume 300 or 400 feet farther to the highest point to be irrigated.

CONVENIENT GATES.—A handy and effective gate and diversion board are used in the flume. The gate is a section of the side about 18 inches long sawed with a bevel at both ends so that pressure from inside the flume closes it tighter. It is held in place by nails driven into the side of the flume and projecting over the ends of the gate.

The diversion board is just wide enough to fit the flume after fastening pieces of belting on its sides to make it more watertight. This board is simply leaned against a cleat nailed across the top of the flume. By this means there are no cleats or other obstructions to the free flow of water. Platforms are laid to take the force of falling water to avoid washing out holes.

Gates from the dirt ditches are similar. Where water is to be let into each check a 4-foot 1x6 is laid across the opening and below the bottom of the ditch. A 1x12 has had a section cut out for the gate, with ends beveled as in the wooden flumes. All of this except the section to be removed is nailed to the 1x6. Another 1x6 is nailed on the ditch side of that and imbedded in the ditch banks. A handle near the top on the section per-

mits it to be raised or lowered in place. Box gates have been used and some few are still left, but the soil, being sandy loam, washes from around the boxes. The weeds must be cleaned from the ditches about every two months.

APPLYING THE WATER.—The checks are about 36x140 feet, and were leveled before planting. No water will be put on this year until late in April on account of the heavy winter rains. The first cutting will come about April 1 if the weather permits. A section of the field, planted last August, is now more than knee high, though not so thick a stand as could be wished.

A cutting is taken off every five or six weeks through the summer, and each cutting is irrigated twice. All of the water is run into one check until there are three inches at the farther end.

The sooner alfalfa is irrigated after cutting, the better. James Clausen, Jr., who runs the place noticed a distinct delay in cutting one crop last summer because irrigation was delayed.

The second irrigation of each cutting comes ten or fifteen days before it is mature.

IRRIGATION IN BUTTE.

To learn definitely the need of alfalfa irrigation in Butte county, the federal division of Irrigation Investigations conducted experiments in 1913 measuring the water used and the yield of fourteen tracts of seven to sixty-seven acres each.

The average amount of water applied on these farms was 3.3 feet per

acre. Moisture determinations were made before and after each irrigation to show the penetration of the water and the percentage of moisture in the soil before and after each irrigation. In many parts of the Gridley district, the water table is only a few feet from the surface, due to irrigation, and drainage is necessary to relieve the waterlogged lands to receive the best returns from alfalfa growing.

The average yield of alfalfa from the tracts under observation was 6.2 tons per acre from five cuttings. Several fields showed yields of 2 tons per acre for an individual cutting and the average yield for the year was considerably reduced, owing to an invasion of grasshoppers in July and August. Water for the Gridley country is supplied by the Sutter-Butte Canal Co. which takes its supply from the Feather river at a cost of \$2 per acre per year except some early contracts which are \$1 per acre per year.

The soil in general is a silt loam and very fertile when carefully handled. The usual method of irrigation is to apply water once after each cutting of alfalfa. An irrigating head of 10 to 15 cubic feet per second is used and the average amount turned into each border check varies from 2.5 to 5 cubic feet per second. Observations this season indicate that for shallow soils containing much clay, the best results are obtained by applying water before and after each cutting, using in each case a smaller amount than when one irrigation is applied. It is believed with a better preparation of land and a more careful handling of water, the amount now used in many cases can be reduced a third.

The Standard Flume

MADE FROM RUST RESISTING GENUINE OPEN HEARTH IRON



Our No. 7 Standard Flume carrying 47 second feet of water on Los Molinos Land Co.'s tract of 12,000 acres.

Watch the Pacific Rural Press for our advertisement describing our Small Orchard Flumes, or, better still, write us NOW for particulars.

Standard Corrugated Pipe Company

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THE STANDARD FLUME IS THE BEST:

BECAUSE it is made from Newport GENUINE OPEN HEARTH IRON, which is an absolute guarantee as to its lasting qualities.

BECAUSE it has expansion joints, which are vital to any flume.

BECAUSE its mechanical construction is as near perfect as it is possible to be.

BECAUSE its sections are in lengths of sixteen feet each, thereby effecting a greater saving in the field work than any other flume on the market.

BECAUSE it's the BEST BY TEST.

OUR IMPROVED IRRIGATION GATE, IN SIZES FROM 8 INCHES TO 24 INCHES, IS THE BEST ON THE MARKET.

Unequalled in Power Efficiency & Fuel Economy

The WESTERN GAS ENGINE

The World's leading Gas Engineers and Scientists without exception agree that "Western" engines are **correctly** designed. They tell you that when investigating engines for the purpose of selecting one for your own use, **never** to select one with **horizontal** valves, for vertical valves are **far superior**. They furthermore say that fuel economy is impossible in a large bore engine, that a small bore has much less working strain, therefore more reliable and durable. For these reasons, the economy and efficiency of the "Western" commends itself to all forms of heavy irrigation and light ranch work.

Built in the West for Western Users

Judged as the Standard

The "Western" is regarded as the leader of high class engines—the engine that's built right by the largest and strongest Corporation in the Southwest. The present Corporation, owned by Capitalists, bought and paid cash for the business and patents of the old Company, and no concern in the world is better able to supply your needs. Your interest is ours.

Minimum Cost of Upkeep

Develop greater power at a lower cost. One-third of a cent per H. P. is all it costs to operate a "Western" when Special Gas Oil at 2½c per gallon is used. All "Westerns" run efficiently and burn cleanly on low grade fuel, even to 38 gravity tops or toppings. Let our Advising Engineers explain which type is best suited for your needs.

Stop Wasting Money—Install a Western

The largest manufacturer in the world and many of the most careful and discriminating investors today are buying "Western" engines for their own use. Some users have now as many as six or more "Westerns" and will use no other make. Why?—*Because it's best—by every test.* Our free Catalog gives complete and valuable information. Write any of the following Salesmen:

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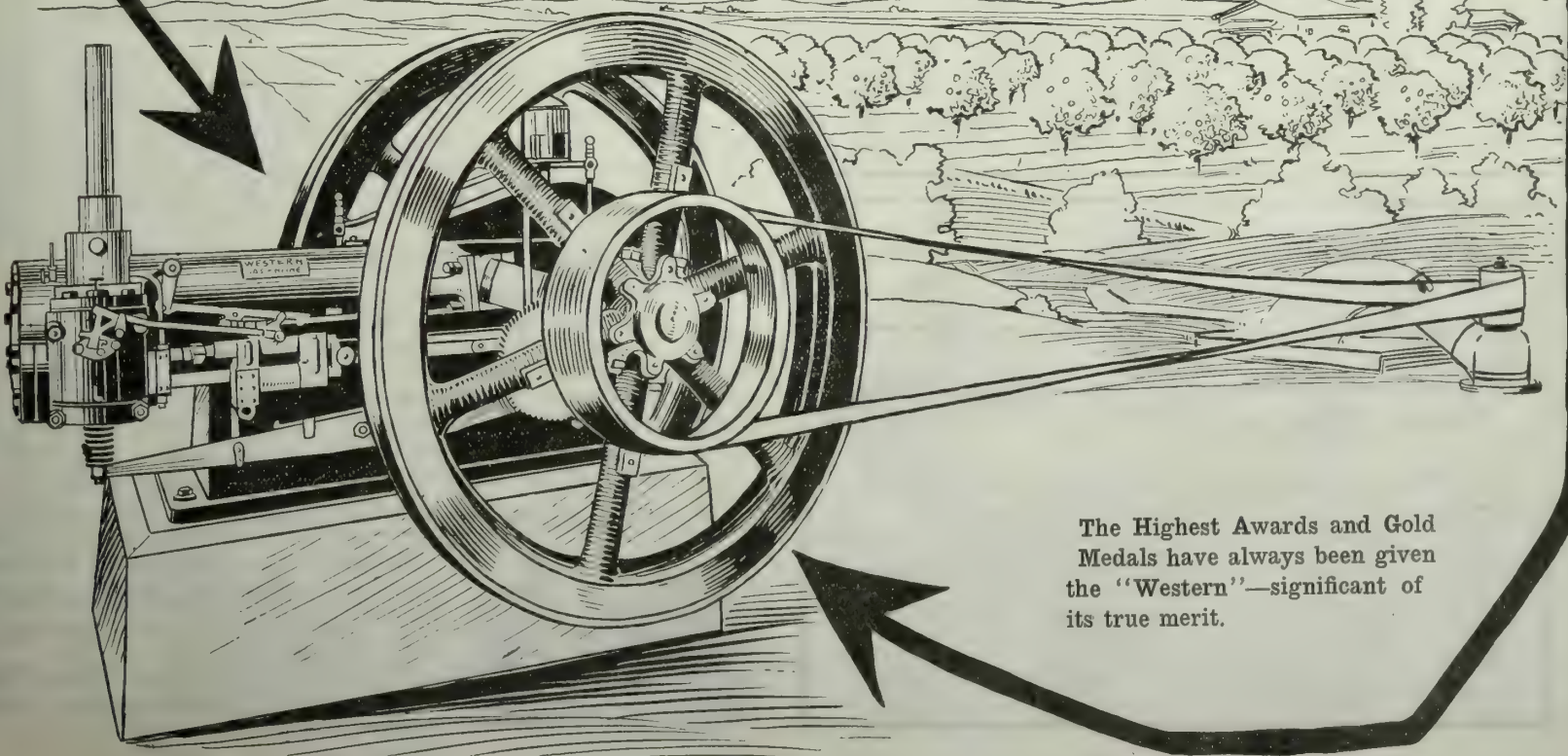
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The Highest Awards and Gold Medals have always been given the "Western"—significant of its true merit.

MEASURING IRRIGATION WATER.

(Continued From Page 361.)

ready described, and from the zero point, which is level with the crest. Reference to the following table will show the gallons or cubic feet of flow.

A ten-acre valencia and lemon ranch in Orange county sold last week for \$26,000. This is the third ten-acre ranch near Olive that has sold recently at \$25,000 or more. The purchaser lived near Olive for years.

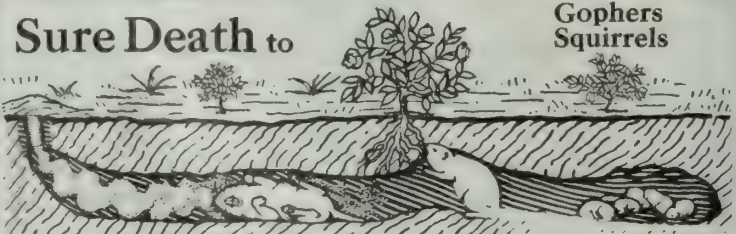
A Butte county olive grove recently sold at \$1100 per acre.

DISCHARGE OVER CIPOLETTI WEIRS.

Inches of water on gauge.	LENGTH OF CREST.							
	1 foot.		1½ feet.		2 feet.		3 feet.	
	Cubic feet per sec.	Gals. per minute.	Cubic feet per sec.	Gals. per minute.	Cubic feet per sec.	Gals. per minute.	Cubic feet per sec.	Gals. per minute.
1	0.08	36	0.12	55	0.16	73	0.24	109
1½	0.10	44	0.15	65	0.19	87	0.29	130
1¾	0.11	51	0.17	76	0.23	101	0.34	152
1½	0.13	59	0.20	88	0.26	117	0.39	175
1½	0.15	67	0.22	100	0.30	139	0.45	200
1½	0.17	75	0.25	113	0.34	150	0.50	226
1¾	0.19	84	0.28	126	0.38	168	0.56	252
1¾	0.21	93	0.31	140	0.42	187	0.62	280
2	0.23	103	0.34	154	0.46	206	0.68	308
2¼	0.25	113	0.38	169	0.50	225	0.75	338
2¼	0.27	123	0.41	184	0.55	245	0.82	368
2¾	0.30	133	0.44	199	0.59	266	0.89	399
2½	0.32	144	0.48	215	0.64	287	0.96	431
2½	0.34	154	0.52	231	0.69	309	1.03	464
2¾	0.37	166	0.55	248	0.74	332	1.11	497
2¾	0.39	177	0.59	262	0.80	355	1.18	531
3	0.42	189	0.63	283	0.84	378	1.26	566
3¼	0.45	201	0.67	301	0.90	402	1.34	602
3¼	0.47	213	0.71	319	0.95	426	1.42	639
3½	0.50	225	0.75	338	1.00	451	1.51	676
3½	0.52	238	0.80	357	1.06	476	1.59	714
3½	0.56	251	0.84	376	1.12	502	1.68	753
3¾	0.59	264	0.88	396	1.18	528	1.76	792
3¾	0.62	277	0.93	416	1.24	554	1.85	832
4	0.65	291	0.97	436	1.30	582	1.94	872
4¼	0.68	304	1.02	456	1.36	609	2.04	913
4¼	0.71	319	1.07	478	1.42	637	2.13	956
4½	0.74	333	1.11	499	1.48	665	2.22	998
4½	0.77	347	1.16	521	1.55	694	2.32	1,041
4½	0.81	362	1.20	543	1.61	723	2.42	1,084
4¾	0.84	376	1.26	564	1.68	753	2.52	1,129
4¾	0.87	391	1.31	587	1.74	782	2.62	1,174
5	0.91	406	1.36	609	1.81	813	2.72	1,219
5¼	0.94	422	1.41	633	1.88	843	2.82	1,266
5¼	0.97	437	1.46	656	1.95	874	2.92	1,312
5½	1.01	453	1.51	679	2.02	906	3.03	1,359
5½	1.05	469	1.57	703	2.09	938	3.13	1,407
5½	1.08	485	1.62	727	2.16	970	3.24	1,455
5¾	1.12	501	1.68	752	2.23	1,002	3.35	1,503
5¾	1.15	517	1.73	776	2.31	1,034	3.46	1,553
6	1.20	534	1.79	801	2.38	1,069	3.57	1,603
6¼	...	...	...	...	2.46	1,102	3.68	1,653
6¼	...	...	...	...	2.53	1,136	3.80	1,704
6½	...	...	...	...	2.61	1,170	3.91	1,755
6½	...	...	...	...	2.68	1,205	4.03	1,807
6¾	...	...	...	...	2.76	1,240	4.14	1,859
6¾	...	...	...	...	2.84	1,275	4.26	1,912
6¾	...	...	...	...	2.92	1,310	4.38	1,966
7	...	...	...	...	3.00	1,346	4.50	2,020

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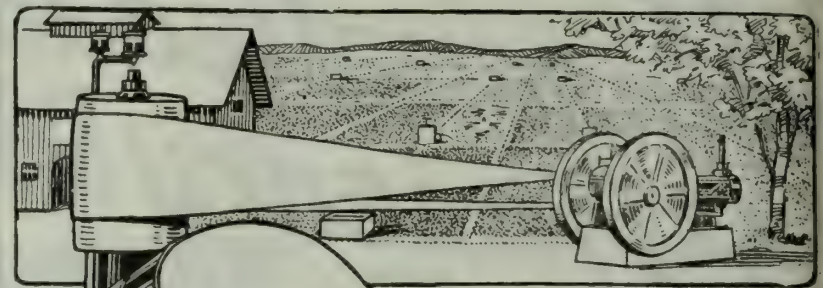
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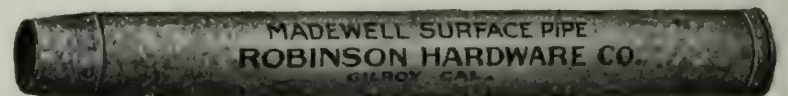
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We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal. Mention Rural Press.

Water Development in Tulare County.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

No other factor has had a greater influence on the live stock development, of recent years, than the pumping plants; and many of our larger dairy sections of today are almost wholly indebted to this new form of water-supply for their rapid progress. Tulare county is perhaps one of the best examples of this, for while a large part of the county has been under ditch water systems for many years, the water-supply was so uncertain that very little alfalfa land development was undertaken. Not only was the mountain water an uncertain quantity from year to year, but it proved expensive to much good land, on account of the weed seed that was carried from one ranch to another, oftentimes seeding an entire field to such pests as Bermuda grass. To this day the effects of this water distribution of weeds may be seen in all of the older irrigated sections.

Although supposedly cheaper at first, the dairymen soon found that such

a water system did not permit the best dairy practices, for in dry years when the water was most badly needed, there was no water, thereby necessitating the disposal of their herds until such time as the mountains were again covered with snow.

Among others who found themselves in this predicament, was I. L. Jamison, who owns an 80-acre alfalfa ranch and dairy a few miles north of Tulare. Under the old ditch system, Mr. Jamison encountered the difficulties before mentioned, and often when he needed water the worst way he was compelled to wait until farmers farther up the ditch had used what they wanted. Finally, six years ago he decided to put in his own irrigating plant, and by boring a well 72 feet deep he found a fine flow of water; in fact, his well, which pumps 170 inches of water at this time with a lift of 22 feet, is considered one of the best in the district.

As electricity was a comparatively new and little-known power at that time, a portable 18-hp. distillate engine was purchased, and a No. 7 pump installed. The portable engine was purchased for additional use on a silo to be erected as well as for wood-sawing or other odd jobs.

The results of the change in water systems has been very satisfactory. With such a large flow of water, it was not necessary to overhaul the distributing system on the ranch, as the old ditches were none too large for the stream. A half-acre reservoir was built for storage, but it has not been needed, the water being pumped directly into the ditches. The system used for distributing the water onto the land is considered a big labor-saver, the plan of leveling and checking being to run the main laterals east and west. These ditches have been run on the dividing line of two rows of square checks, so that the water may be diverted to either side, or both, from the one lateral. By having a vaporizer attachment on the engine, a low-grade oil is used which costs $3\frac{1}{2}$ cents per gallon; and two gallons of oil will run the engine an hour; so it will be seen that fuel cost is very light. Mr. Jamison states that he can irrigate his entire 80 acres at a cost of 25 to 30 cents an acre. With the ditch-water irrigation, the charges varied, the usual price for the first irrigation being \$1.50 per acre; so the pumping plant is more than able to compete with the old system in cost of operating.

One man is all that is required to do the irrigating and attend to the plant. The upkeep charges on the engine and well have averaged only about \$5 per year.

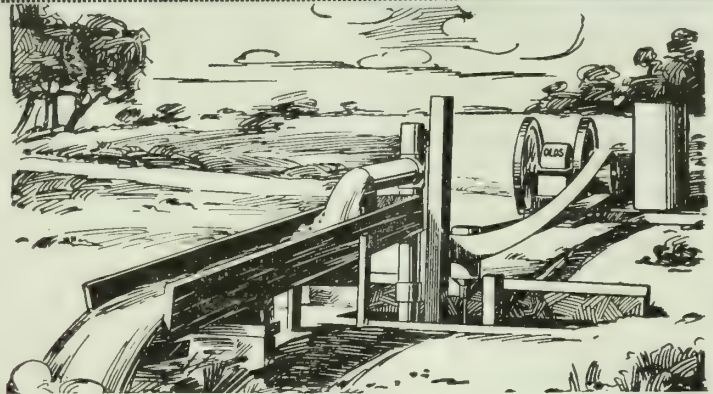
Although the above figures are accurate, water cannot be so cheaply developed in every instance, as there are very few wells that can be so economically operated.

Located a short distance from the above-mentioned ranch is another water system which will be when completed one of the largest and most complete plants in the county. This is on the Tagus ranch, which comprises 3000 acres of land, all of which will be seeded to alfalfa in the near future, there being already over 1200 acres growing. Electric power is being used on this place, and the dis-

tribution is done through underground cement pipes, with gates at each check for taking out of the main line. These lines of pipe are $1\frac{1}{2}$ miles long, extending all the way across the ranch, each line being supplied with three electrically driven pumps. The initial cost of this system will amount to a great deal; but after it is installed the saving of labor and water will more than repay the owners, for the water is carried direct to the land with no evaporation or ditch leakage, and one man can handle a larger volume of water than would be possible

with ordinary dirt ditches. There are already three miles of this pipe, and when the entire 3000 acres are similarly equipped it will be one of the largest privately owned irrigation systems of its kind in the State.

With these and similar irrigating plants in most parts of the State, the agricultural products of California have grown and will continue to much larger proportions than would ever have been possible without the aid of mechanical water developing and lifting devices which are now so commonly used in all irrigated sections.



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Pipe Irrigation in the South.

[Written for the PACIFIC RURAL PRESS
By R. E. HODGES.]

A trip through southern California reveals to a stranger a new system of irrigation which will appeal to him as rather expensive but perfectly efficient. And further investigation shows that it is not so expensive as it seemed.

It is the concrete standpipe and underground pipe distribution which makes this system unique.

The main standpipe is simply a cylinder into which the pump discharges. It is higher than the highest point of land to be irrigated and large enough to take the water without running over while there is an outlet through the pipes. The pump may throw water into it from the top and is not troubled with the pressure of a long pipeful of water sloping upward from the pump to the highest point. Gravity of the water in the standpipe forces it out at the other end. The underground pipes are laid along the upper edge of fields to be watered. They are made of galvanized iron or cement. Cement pipes are re-inforced with iron or steel rods or netting if much pressure is to be put on them.

At every row of trees in an orchard or at convenient distances in vegetable gardens, or at every check in alfalfa fields is a small standpipe rising just above the ground. In the best systems a valve regulates the flow from each, and each has four openings 90° apart. Each of these openings discharges into a furrow so that in an orchard each pipe supplies two furrows on each side of the tree row.

The advantages of the system are many.

Water runs up hill and down, in the pipes—expensive grades are not necessary. There is no seepage or evaporation in transit and no washouts. There are no ditches to bridge or drive around or to clean out. Weeds interfere, in open ditches, with the flow, and seed down the rest of the ranch unless cleaned out every two or three months as is practiced in many places. Gopher holes do not rob the pipes of water which is precious when trees or crops need it. One stream or many of equal volume may be used at once.

Equipment for 20 acres costs \$400, not including pumps, engines, or labor. Concrete gets better as time goes by, and underground pipes seldom need repair. Only the small distributing or "turnout" standpipes are in the way—the rest is below the ground. And many people place the small standpipes somewhat under the end tree or close to the fence.

On uneven ground, the pipe line is run the steep way and the furrows leading from it are left almost level, following the contour of the land.

A very few ranches north of the Tehachapi use this system.

Allen Brothers of Orange county irrigate 40 acres of chili peppers ten to fifteen times a season besides many acres of other garden truck on several ranches. With their pipe system, one man turns the water on at one place and then goes to another, leaving the first one an hour or two safely on short rows, sometimes keeping three sets going at once.

H. M. Cole has tried it satisfactorily on his oranges and the neighbors, seeing his success, put in systems of their own a year ago and since Mr. Cole's

supply is taken directly into a standpipe, three feet high, from the city water system. It is distributed by iron pipes 22 inches underground to the "turnouts." There are two lines of pipe about 200 feet apart, each sending the water down the rows by four furrows from each turnout.

A northern orchard man irrigating 250 acres from a deep pumping plant remarked that a pipe line would be too expensive, but perhaps he had not considered the expense of pumping the water wasted by seepage and evaporation from the main and lateral canals. Ernest Fowler has piped about 60 acres of the flat San Joaquin land, while a large deciduous orchard on the floor of the Santa Clara valley is irrigated this way. Both places are where water is not hard to pump.

A PORTABLE POWER-PLANT.

[Written for the PACIFIC RURAL PRESS.]

Farmers who use power for pumping plants very often find it more convenient to use a gasoline engine than electric power as they can, by mounting the engine on a small truck, move it to any location, where with an electric motor this cannot be done unless transformers are placed at the different places where the power is needed.

The electric companies furnish one set of transformers with each plant but charge from \$200 to \$300 for any additional sets.

A scheme to overcome this additional expense was recently seen on a dairy where electric power was used for pumping as well as for filling the silo and other work of like nature.

A small truck was purchased and the motor set on one end, the same as a gasoline engine. On the other end the transformers were secured in place and enclosed with lumber on the sides and a board roof was made over the entire truck to protect the motor and switches from the weather.

Cut-outs were made on the pole line at all points where power was needed and the only work necessary when power is needed is to haul the motor to place and cut in on the main line. The meters are also placed on the truck so that instead of having \$500 or \$600 invested in transformers this farmer has only the extra cost of a small truck.

WE WASTE IRRIGATION WATER.

Wasted—inexcusably wasted—that is what becomes of more than half the water of many California irrigation systems. Two or three times as much land might be irrigated with the same amount of water, and everybody be better off.

Thus does the University of California appeal to the people of the state to husband their precious supplies of water, and make them give life to the greatest possible area of the deep and marvelously fertile soils of California. Striking evidence of the present extravagant waste is given in a circular by Bernard A. Etchevery, head of the Department of Irrigation Engineering, on "Increasing the Duty of Water," just issued by the College of Agriculture.

How may the loss and waste of irrigation waters be cut down from say 76% to 27%? Here are some of the

ways Professor Etchevery suggests:

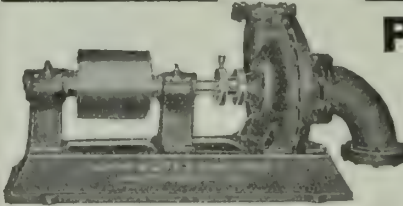
Where the value of the water will justify the investment, concrete ditch-linings will reduce conveyance loss, he says, from sometimes as much as 40% to about 5%, and water-logging of soils be prevented beside. Oil or clay puddle lining may be used, though good solid concrete is likely to be actually cheaper in the long run.

By use of larger heads of water and short furrows or runs instead of long ones 25% of waste from excessively deep percolation can often be saved.

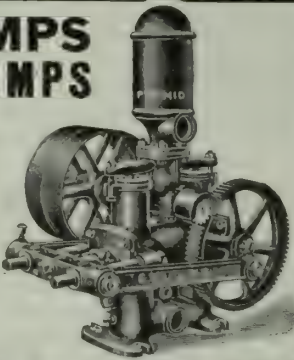
Loss by evaporation can be cut down by deep-furrow irrigation. This permits cultivation soon after irrigation, a great preventive of evaporation wastes.

Waste by surface run-off can largely be prevented by skill in preparing land for irrigation and in applying water.

These improved methods enrich the whole community, Professor Etchevery points out, by making possible the irrigation of two or three times as much land as before, with consequent great expansion of the community's production. Besides this, they aid the individual land-owner by preventing the water-logging of his land and the coming of alkali troubles from over-irrigation and seepage wastes. To correct such avoidable troubles, once they have occurred, means expensive drainage systems, now a crying need in large areas of valuable California land.



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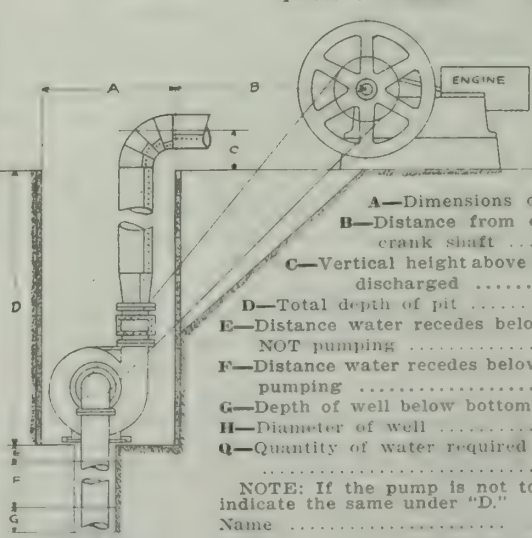




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A—Dimensions of pit.....

B—Distance from edge of pit to engine
crank shaft

C—Vertical height above ground water is to be
discharged

D—Total depth of pit

E—Distance water recedes below bottom of pit when
NOT pumping

F—Distance water recedes below bottom of pit WHEN
pumping

G—Depth of well below bottom of pit.....

H—Diameter of well

Q—Quantity of water required in gallons per minute

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IRRIGATING SOUTHERN BLACKBERRIES.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

It is quite common in Los Angeles county for all the neighbors to irrigate from one well, buying the water by the miner's inch from the one who operates the pump. The price varies with conditions but is close to \$1 an hour for 100 miner's inches with some reduction for using the water at night.

THE PUMPING PLANT.—Such an outfit is run by Judge T. B. Cannon, pumping from a 180-foot well with water 35 feet below the surface, using a 24 hp. distillate engine to pump a stream of 90 miner's inches. When water isn't going directly onto somebody's field, he has an auxiliary pump which raises it about 25 feet into a 3000-gallon wooden tank. In the irrigating season, the pump is running almost constantly.

The whole outfit cost \$2500 a few years ago and costs 30 cents an hour for distillate; the pump and well are cleaned out once a year.

The engine runs 164 revolutions per minute, has two fly wheels $5\frac{1}{2}$ feet in diameter and runs the Crow centrifugal pump by means of a belt running over a 4-foot pulley to the pump shaft 30 feet away. This shaft is two inches in diameter, but for some reason it used to break now and then. Mr. Cannon thought perhaps there was too much of a load on it so instead of raising the water to the tank by means of the centrifugal, he ran it into a force pump at the surface which he connected to the engine in an original way. Fastening a small pulley onto the shaft of the main pulley he ran a belt about 12 feet to an old windmill gear made fast to timbers in the ground. This gear reduced the speed three to one and operated, by an eccentric wheel, a gas pipe 18 feet long, 48 strokes per minute, to the force pump, which received the water from the centrifugal and sent it up to the tank. Since then the shaft has not broken.

IRRIGATING THE BERRIES.—Of course Mr. Cannon waters his own place first, then furnishes water to the neighbors. He has an acre or two of bush berries, some of alfalfa and an acre or two of mixed tree fruits.

In irrigating the berries, if he wants to hold them back, no water is put on in the winter. Then when they are irrigated in warm weather, they leave out quickly, but he has delayed the crop three weeks this way. Usually, however, Mr. Cannon aims to get Crandall blackberries from June 15 to November, which is possible by his system of irrigation and pruning. So the water is applied in winter and about every ten days until the berries are as big as peas, cultivating between times. The rows are eight feet apart and the plants four, so that one-horse cultivation is possible until the fruit gets so heavy as to bend over into the open space. When ripening time begins in June, a ditch is dug close to the vines on each side of the row, for irrigation. This gets water pretty well where it is needed, the ditches are out of the way of the cultivator after the first crop is off, and they are shaded so as to avoid evaporation in the hot summer. Water is applied every four or five days during the heavy picking, then every ten days till the main summer crop comes on when it is applied twice as often



The history of California is the history of irrigation. The American Steel Pipe & Tank Company was one of the pioneers in the manufacture of irrigation pipe, and very early in its career realized the importance of furnishing expert knowledge and service to its patrons in the designing of irrigation systems. We therefore organized out Engineering Staff, which has successfully solved many a seemingly impossible irrigation problem.

This company will solve your problems, and furnish you a complete irrigation system, designed by our irrigation engineers and installed under the direct supervision of the company. Our success in the past is the best index of what we can do for you. Let us cite you three

CASE No. 1

An increase of \$5000 per year net from 100 acres of alfalfa through the installation of a complete underground and surface irrigation system by one of our experts.

CASE No. 2

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Triumphs of Irrigation

In these cases it was not alone the use of irrigation pipe, but the expert designing of the system that produced successful results.

"AMERICAN" products are built for service, durability and easy handling. Each is the best for its own particular work, and in addition to this high quality you receive as well

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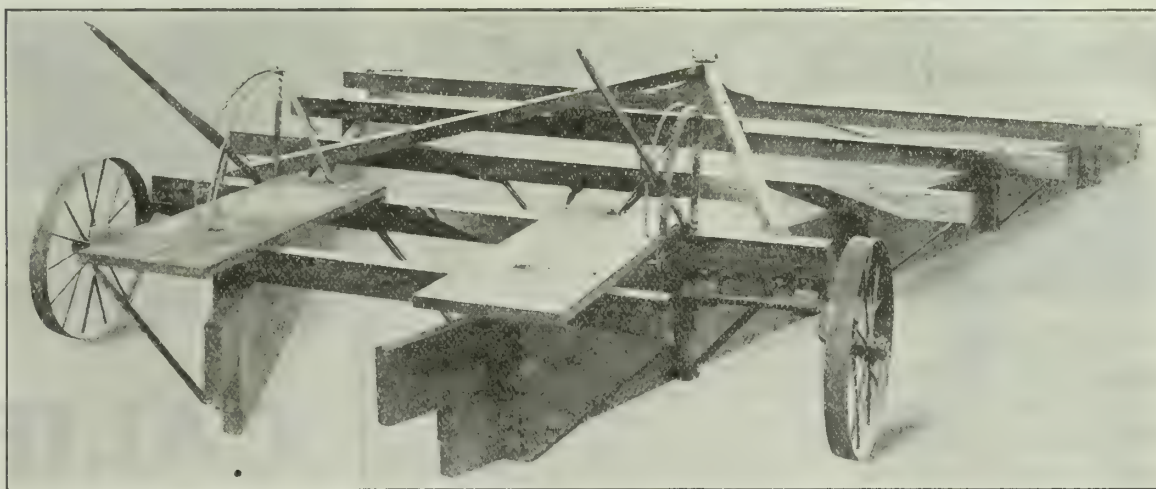
Make your ranch produce greater net profits per year. Let us help you plan the way. It costs you nothing for our service, and our prices for the pipe itself are no higher than the cost of pipe without expert service. We will appreciate correspondence with those who are considering the installation of either underground or surface irrigation systems. A request will bring our catalog and other literature promptly to you.

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Schmeiser Mfg. Co., Davis, Cal.

again. Irrigation when the berries are turning black makes them as big again and a better color. While the juice might thus be considered diluted, this is the sort of berry people buy, and the proportion of juice to seeds is what makes a desirable market berry.

Ring worm is a vegetable parasite which is easily communicated. To rid the stables of it, burn all litter, clean and whitewash stalls, and so forth. Wash the affected parts of the animal with warm water and soap. Cut the hair from around the sores. Paint with tincture of iodine for several days and rub on zinc ointment if sore.

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Best Land Roller made for the Farmer, Orchardist, Vineyardist, Nurseryman and Gardener.



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Morganhill, Cal.

Constructive Agriculture—No. 11.

Extending Irrigation by Preventing Waste.

By S. FORTIER, Chief of Irrigation Investigations, U. S. Department of Agriculture.

[In his address recently before a Round-Up of farmers at Logan, Utah, Professor Fortier struck a deep note in constructive agriculture by outlining a program of reform for irrigation in that state. He indicated these three factors in reform, viz.: "1. A higher efficiency in the use of irrigation water. 2. An increase in the available water supply. 3. The equitable settlement and protection of rights to the use of water." All of his prescriptions under these heads are doubtless more or less applicable to California. At this time however we select the first two of them which involve very

striking illustrative facts and deductions.—EDITOR.]

A HIGHER EFFICIENCY IN IRRIGATION.
—One of the weak features of irrigation as practiced in the majority of districts is the low efficiency of water. For every three gallons taken from the stream it is seldom that more than one gallon is put to a beneficial use. The remaining two gallons are wasted in transmission losses and losses due to deep percolation, evaporation, and run-off. When the hydro-electric engineer uses a stream for power he transmits to the consumer about two-thirds of the total mechanical energy in the stream. In other words, the efficiency of water for generating power is about double that for irrigation. There is no good reason for this wide difference. In the case of water for power, 17 to 20% of the total energy in the water is lost by the turbine wheel. The generator may lose 7%, the two transformers 6%, and the transmission line the balance.

Now, of the four causes of loss in irrigation water, two can be almost wholly prevented. It is entirely feasible to transmit water for irrigation at a much smaller loss than a copper wire transmits electric energy and it is also feasible to prevent all run-off from the irrigated field. There remain the losses from deep percolation and evaporation and both of these can be reduced to a small percentage by the exercise of intelligence and care.

According to the last census the general average duty of water over the entire West was 4.8 acre-feet per acre and about 3.5 acre-feet per acre in Utah. In order to convince you that these quantities are far too large I have but to cite the use of water in the Pomona district of southern California which has a rainfall about equal to that of the Salt Lake valley. There the average duty is seldom more than 9 inches as compared with 42 inches in depth over the surface in Utah and 57.6 inches in the western states generally. The use of irrigation water around Pomona, California, shows the high efficiency which it is possible to attain, provided the losses due to conveyance, deep percolation and evaporation are all reduced to a minimum. But, you say, conditions in Utah differ from those in southern California and the farmers of this state can not afford the expense of water-tight channels and pipes. Such an objection might well be made but bear in mind that I am not asking you to reduce the 42 acre-inches per acre which you are now diverting, to 9 acre-inches. I am only urging you to double the efficiency of irrigation water by raising it from 33% to 66% and in so doing decrease the quantity used per acre from 42 to 21 acre-inches.

[We presume if Prof. Fortier had been preaching to Californians he could have found as great disparity within our own borders as he does between Pomona and Utah. However we have no particular objection to Utah being the goat in this instance.—EDITOR.]

The census figures credit Utah with 3852 irrigation ditches. Each of these acts like an elongated sprinkling can. It waters all the waste places along the route. Herein lies the greatest

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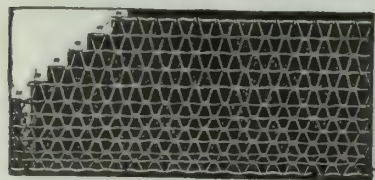
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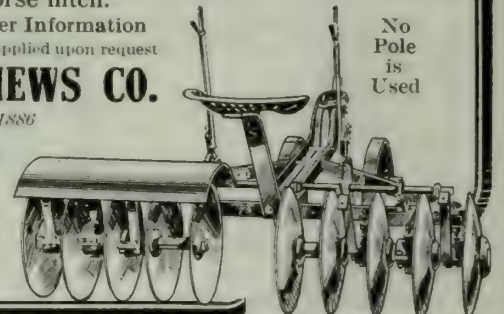
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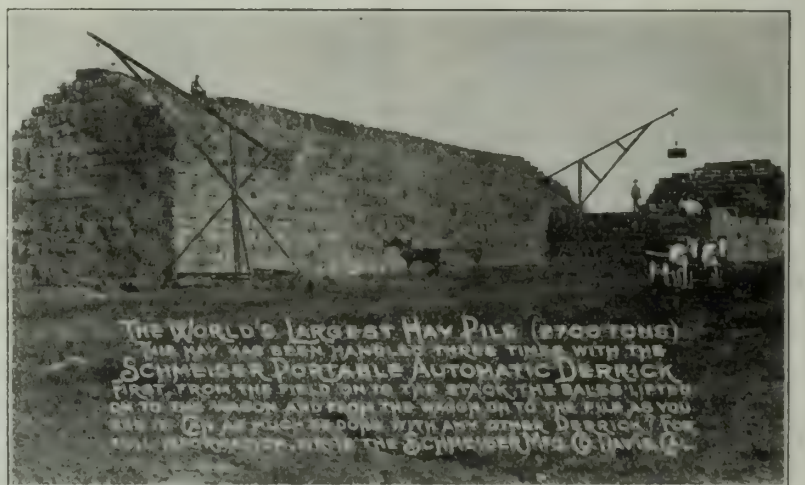
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Assistant Passenger Traffic Manager
San Francisco, Cal.

source of loss. The remedy, to be brief, consists in reducing the number of ditches and in lining the more porous with cement concrete. Our branch of the Government service is now preparing a publication on concrete lining for such channels and also a publication on headgates.

Not only is there urgent need for better structures and more impervious canals, but more attention should be paid to the lessening or prevention of other waste. No benefits accrue in wetting soil ten feet below the deepest roots. Farmers should strive to apply water to the roots of plants and not to the gravel and rocks below the soil. They should likewise desist from irrigating every road on which water can be run. Furthermore, water is becoming too valuable to waste in saturating the atmosphere. Utah contributes its quota of moisture to the air by the excessive evaporation from the surface of Great Salt Lake. The water applied to the fields should go to the nourishment of the crops and be prevented, as far as practicable, from passing into the air to form clouds in the sky.

INCREASING THE AVAILABLE SUPPLY.—The next feature to which I wish to direct your attention is not so much one of reform as one of proper development. The state has a land area of over 52½ million acres but under the present wasteful use of water it is doubtful if the available supply will cover more than 2 million acres. While the greatest need is a more economical use of water, there should be no relaxation of efforts to increase the available supply. This can be done by building storage reservoirs, pumping water from the underground sources, and securing temporary storage in the soil itself. One of the most noteworthy examples of the beneficial results of storage is to be found in the East Canyon reservoir, the property of the Davis and Weber Canal Co. The dam which forms this reservoir is now 145 feet high and stores over 12,000 acre-feet. So many additions have been made to the original structure that it is questionable if any more can be added to the old foundation. However, the drainage basin above the reservoir is far from being exhausted. It is thought that as much more water can be stored and the company is now seriously considering building a first-class masonry structure on a new foundation and of sufficient height to store all the run-off from the basin. The sand hill farmers who own the reservoir and canal system have 12,000 acres in addition to what they are now watering on which to apply the excess storage of the new dam.

Last fall I had occasion to examine and report on a similar project located on the south fork of Ogden river. That stream has an annual run-off of about 37,000 acre-feet, and it is proposed to intercept this entire flow by a dam and storage reservoir. These are but two instances out of many that might be cited to show the possibilities of storage.

The available supply is also being increased by pumping water from underground gravel beds. In this connection I might say that few even dreamed a quarter of a century ago that water would ever be pumped to supply the Brigham peach district. Now a large part of that area is watered from wells 50 to 75 feet deep. In like manner other underground supplies are being discovered and utilized.

ed. Irrigation by pumping may therefore be regarded as an important factor in the reclamation of new lands.

Undoubtedly the cheapest way to increase the available water supply is to store a part of the flood flow of the streams in the porous soils and subsoils of the upper valleys and leave to gravity the task of withdrawing this soil moisture to supply lower levels at later periods. Many of the streams of Utah flow through several mountain valleys in succession. The copious use of flood waters in the early part of the season in the upper valleys stores large quantities in the soil and subsoil. Much of the water so stored is returned to the stream and utilized by lower irrigators in the same season.

THE "GOLDEN PRUNE."

To the Editor: Referring to inquiry about the Golden prune, I introduced this variety from Oregon about 1890. At my Napa orchard it proved very satisfactory as a cropper, but there was no demand either for the fruit or the trees, so it was dropped from our list. An adjoining orchardist planted a good many trees, which I suppose are still there. It is too late to get scions this year.

The Golden prune is one of the good things that 'might have been': even at a low price it paid well, because of size, sweetness, and productiveness; and it might well be a good pollinizer for other plums. It would also be a good plum for the canners. The tree requires very close pruning, like Burbank's "Sugar." LEONARD COATES, Morganhill.

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FOR SALE—Peach, apricot, plum, prune, fig, apple, pear and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants; elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRANK & KOHMAN, Nurserymen, Box 1212, Fresno, Cal.

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TREES—Special prices on grafted walnut trees. Oranges, lemons, apricots, pears, peaches—everything. Get my prices. A. R. Marshall's Nurseries, Box 64, Santa Ana, Cal.

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If you are interested in olives or rhubarb, write for my booklet. Alta Vista Nursery, Highland, Cal.

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My 20-acre irrigated farm near town. Delightful climate. Place highly improved. Want to change climate. W. S. ROBINSON, R. 1, Box 27, Dos Palos, Cal.

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FOR SALE—320 acres near Electric railway, with growing crop of barley; land suitable for almonds or oranges. Write I. G. Zumwalt, owner, at Colusa, Cal.

FOR SALE—Four and seven-tenths acres of level land close to San Jose. Lot contains over 200 peach trees. Address Box 6a, R. 2, San Jose, Cal.

Send for illustrated circular of best, most artistic orchard home in Santa Clara Valley; 20 acres. JOHN F. BYX-BEE, Palo Alto, Cal.

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BRAE BROOK COLLIE KENNELS, Route 3, Box 69, Santa Rosa, Cal.—Puppies for sale by Lord Ormonde ex Brae Brook Babbie (Tri-colors), \$15 to \$25.

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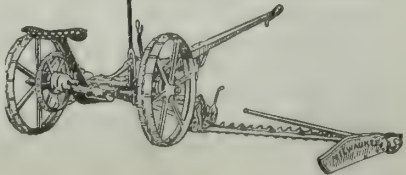
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AGRICULTURAL REVIEW.

Citrus California.

This is "Orange Day" all over California and all over the railroad lines of 26 of the principal railroads of U. S. and Canada. Everybody is eating oranges except Santa Clara valley which is hopefully, if sourly looking forward to a "Lemon Day."

The optimistic influence of "Orange Day" is felt even in Florida, where 15 baby orange seedlings 11 months old have burst into bloom.

Colusa county is coming forward with a seedless lime tree which has excited Deputy State Horticultural Commissioner George P. Weldon. This is a reasonable excitement after learning of a lemon tree in the neighboring county of Napa from which 60 dozen fine lemons were picked in one week.

Portersville trees were in blossom last week fully ten days ahead of normal. Along with the same report is another saying that the Portersville navel orange crop is almost all picked and marketed at improving prices.

John Scott of Orange county recently sold to Dr. L. D. Johnson of Los Angeles county a twelve acre grove with no buildings at \$4000 per acre. The trees are nine-year-old Valencias.

An orange and lemon planting of 560 acres goes into the land next to the foothills of Colusa county.

A great meeting of citrus growers was held March 14 at Portersville, at which widely lemon citrus men discussed the vital problems of the industry.

Olives.

Hooper and Son of Sutter county have about completed planting 20 acres of Mission and Manzanillo olives. A hundred and twenty acres go into grapes and peaches.

Orange Day is to be observed by an Olive Congress in Marysville to increase interest and give information on the growing and processing of olives.

Deciduous Fruits.

The San Jose free market has developed into a place where walnut trees are sold.

Parcel post is tending the same way. Since a week ago, scions, cuttings, roots, bulbs, etc., weighing four ounces or more are carried at pound rates.

Shipping rates on apples to Los Angeles were this week made the same whether they are to be eaten fresh or dried. The rate has been \$1 a ton higher on the former class.

"Last year apricots burst into bloom, this year they are straggling," according to Dr. J. G. Berneike, of Tustin, who notes that slower ripening will have an influence on the amount that will be dried.

Kern county planted 169,000 deciduous fruit trees last winter and orange and olive planting are just beginning. Fruit and oil show diversified interests.

Reports go that Sacramento valley apricots had not enough water last year to make the proper number of fruit buds.

W. H. Bissell of Alameda county is grafting 2½ acres of cherry, apricot, and plum trees to the cherries produced by Luther Burbank—the Burbank and Abundance.

Contra Costa county has surpassed

all previous records in deciduous planting. Bartlett pears lead, with prunes next.

The California Walnut Growers' Association is wrestling and learning as others have and will, that Eastern jobbers and consumers demand prime goods when they pay California prices. The complaint is that the nuts shipped last year were small, discolored, and poorly graded. We better not pay freight on fruit and produce that causes complaint.

Dried Fruits.

A reported last sale of Sonoma county prunes occurred last week, when Rosasco Brothers sold \$9000 worth.

Dried peaches are waking to activity. Sixty-five tons were recently shipped from Hanford to Germany.

J. P. Dargitz has resigned as manager of the California Cured Fruit Exchange.

Grapes.

The orange men beat grape growers to it, but perhaps Raisin Day will eclipse Orange Day, for a well planned nation-wide campaign is on for the purpose of eating up all the raisins that are left on April 30. Anyhow, the California Associated Raisin Company believes there will be no holdover this year. Shipments are heavier than last year and the demand is stronger. Raisin Day promoters hope to spend \$5000, of which \$1900 is already raised, and they want us all to send boxes of raisins to our Eastern friends to call their attention to the magnitude of this California product. President Wilson and Premier Robert Borden of Canada will be formally invited to attend Raisin Day celebration in Fresno.

A drum of Emperor grapes packed in redwood sawdust October 15 was opened last week and the berries were found firm and fine for eating. Packing the Emperors is likely to relieve the fall market for Malagas.

A Sonoma county wine grape grower began planting prune trees in his vineyard six years ago to forestall the prohibition movement.

Using refuse grape seeds for stock food is a late development. Being ground into meal, the three or four thousand tons annually wasted would furnish a feed 12 per cent protein.

Strawberries are the most universal of fruits and second in value only to the apple, according to Albert F. Etter, who has spent a lifetime of work on the berries.

Vegetables.

Cantaloupe shipments from Imperial valley are expected to beat last year's record of 3500 by about 1500. Plants were protected from frost early in the spring by use of paper drinking cups.

Orange county peat lands have long been noted producers of celery, but they yield the palm this year to the higher sandy loam around Orange, the first full carload from which was shipped last week at \$2.80 per crate f.o.b.; \$470 for the car. This, and nearly as much again, was raised on one acre.

Specimens of potatoes sold by a Sacramento firm for planting in Eldorado county were brought to our office last week. They were afflicted

TREES

Special Prices

If you haven't yet placed your order for everything you intend to plant this season, you can profit by getting in touch with us at once. Ask for our surplus list and special prices. We still have a splendid stock of nearly all the very best varieties of

APPLES PLUMS ALMONDS QUINCES FIGS	PEARS PRUNES WALNUTS PECANS GRAPES	PEACHES APRICOTS CHERRIES NECTARINES PERSIMMONS
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Now is the Time to Plant

Glorious rains and exceptionally favorable conditions insure a long planting season. The outlook for both citrus and deciduous fruit trees was never better. If you are still undecided write us for suggestions.

ORNAMENTAL TREES AND SHRUBS

A splendid assortment of ornamental stock of every variety awaits your orders. It makes little difference what you may want to plant in the line of deciduous and evergreen trees, vines, shrubs and roses, we can supply you—at reasonable prices—promptly and with the best quality stock.

LET US ADVISE WITH YOU—FREE

We make no charge for consultation and are always glad to advise our customers as to the most suitable varieties to plant in different localities. Our many years of experience and close intimate touch with all the various sections on the Coast enables us to intelligently counsel with our customers.

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It lists and prices over 2000 varieties of fruit and ornamental stock handled by us and a copy should be in your hands. If you haven't already received one of this season's issue, write for it now.

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Solves the "Irrigation Problem" and affords rain when you want it, and like you want it, at the minimum cost of installation and operation. Sample postpaid \$3.00. Money back if you want it. Descriptive literature on request.

J. P. CAMPBELL, Jacksonville, Fla.

with such a combination of maladies that no one disease could be well distinguished. The lid ought to be put no to all such business by fines big enough to stop it. These are the sort to whom we owe our quarantine on potatoes by the States of Idaho and Washington.

A carload of potatoes from Inyo county was recently condemned in Nevada for scab and pits made by al-

falfa beetles. They were sorted and 40% dumped.

Asparagus is shipped in wet moss from Imperial valley to Chicago. Over 7100 crates, netting over \$17,000, were shipped from one ranch last year.

Chico is to have an eight-acre asparagus farm.

Contra Costa county sent out its first full carload of asparagus last

week. Smaller lots had been going for two weeks.

New potatoes and green peas are being demanded at the San Jose free market.

Experimental sweet potatoes in San Joaquin county raised last year proved so good that new supplies are being ordered from which to raise plants.

Some of the California and Nevada beet sugar factories have suspended on account of free sugar.

Big tomato plantings will be made in Tulare county this year.

Onion seed shipments to the United States from the Bermuda Islands in 1913 amounted to more than 93,000 pounds, valued at \$84,645. There was an overproduction there last year which is likely to be sold as fresh seed next year.

England has a new beet-sugar industry which has developed so that last year one factory used the crop of 60,000 tons from 4500 acres. Experienced Hollanders were brought over to show the Englishmen how to raise beets.

Troubles.

Empty fruit boxes may not be returned from San Francisco for use again, since the Board of Health decided they are insanitary.

Fines of \$10 to \$75 have been imposed on more than a dozen concerns for violation of the United States insecticide act.

Cherry gummosis cankers must be cut out entirely, and the wounds and tools washed with a 1 to 1000 solution of corrosive sublimate to kill the bugs.

Rice weevil has been found in Arizona seeds. The remedy is thorough fumigation with carbon bisulphide.

The red spider attracted a big meeting in Yuba City last week. Sulphur is recommended, either dry or wet. A Government bulletin recommends thin flour paste, which sticks the mites immovably to the leaves until they starve to death.

There are other troubles, but let us close, not so pessimistically with troubles, but with the avalanche of good reports from all sections for practically all crops, since the signs indicate bumper crops for which, in most cases, bumper prices will be received.

CULTIVATE TO SAVE WATER.

"Less irrigation and more cultivation," is the proven result of many experiments and investigations in irrigated sections of the country. By keeping the soil loose, cultivating after every irrigation, much moisture can be retained in the soil that otherwise will evaporate from the surface and be lost. Even young alfalfa and grain crops may be cultivated by using a weeder or a spiketooth harrow with the teeth set backwards. A few

weeks ago, Prof. Stanley F. Morse, Agriculturist of the Arizona Agricultural Experiment Station, found a field of drilled alfalfa about 1½ inches high which had been irrigated two weeks previously, the soil having dried very hard. At his suggestion a disk harrow, well weighted, was run over the field twice in opposite directions with the disks set straight; it was followed by a spiketooth harrow having the teeth slanting backward which was run in both directions also. A fairly good mulch was secured that could not but benefit the alfalfa. Scarcely one per cent of the plants were destroyed by this operation. Of course, this field should have been cultivated with a spiketooth harrow as soon as possible after irrigating. Twenty-five per cent of the water ordinarily used may frequently be saved by judicious cultivation.

DESERT LAND ENTERPRISES.

"We are going to get water on the land if we have to send the militia to get it," said Governor Oswald West in addressing the third annual Oregon irrigation congress in Portland recently. Attacking the Desert Land Board, of which he is a member, and saying that he wanted to do penance insofar as he is able for the shortcomings of the board, Governor West advocated immediate relief for the irrigation projects of Oregon. He urged co-operation of federal and state governments in expediting this relief and the use of the school funds on mortgages on acreage embraced in the reclamation projects.

"We must do something, and without delay, and we must do it before there can be a change in the administration at Washington, for whenever there is a proposition on foot, each new administration wants to investigate it all over again," said Governor West. "Secretary Lane has called a conference of the eleven Western governors to see what can be done about the reclamation problem, for most of the projects under the Carey Act in the West have failed and the people who bought bonds have been stung."

LADYBIRDS FOR APHIS.

To the Editor: Last year the lice almost got the best of my rose bushes. I tried a good many things to kill them, but not any of them seem very effective, and they are coming on again this year.—C. A. G., Ceres.

[Write your county horticultural commissioner at Modesto, telling how many bushes are affected and asking for enough ladybirds to destroy the lice, or spray with an insecticide that will not injure the foliage.—EDITOR.]

THE APPLE WORM.

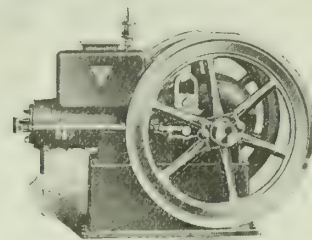
To the Editor: I have in my family orchard some apple trees about 8 years old, on which the apples are invariably wormy and start to rot, sometimes even on the trees. They have had good care, and always sprayed with the rest of the trees in winter.—E. D. S., Ceres.

[You have to deal with the codlin moth. The little fruits, while still upright after the fall of the petals, must be sprayed with lead arsenate according to instructions in manufacturer's circulars. For an early apple, you must spray again in about a month, and with later apples two or three times at about three-week intervals.

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Alpha Engines are low fuel consumers, with high efficiency, and are the highest grade, most reliable gasoline engine that money can buy.

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Alpha Engines can be furnished with special carburetor for using low grade distillate or tops.

Alpha Engines were awarded the gold medal at the California State Fair last season and were in competition with about thirty-six other engines.

Investigate the Alpha before buying.

Write for our large illustrated Alpha Catalog.

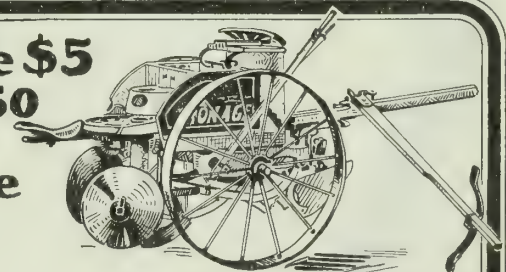
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Per
Acre



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Implements, Wagons, Dairy Supplies, Road and Grading Machinery

LOS ANGELES—California—STOCKTON

Winter spraying and good culture do not affect this pest.—EDITOR.]

FETERITA AND KAFFIR.

To the Editor: I wish to say a few more words through your valuable paper regarding the new feterita sorghum or corn. Since the corn crops have been threshed, the threshers report that feterita run about 31 sacks

and Kaffir about 16 sacks per acre. We have learned since the corn was threshed that feterita does not heat when put up in bulk as does Kaffir corn.

J. H. KEITH.

East Bakersfield.

The Arlington Poultry Breeders' Association is discussing the co-operative storing of eggs.

SPRAY WITH

HEMINGWAY'S LEAD ARSENATE

EASY TO MIX
STAYS IN SUSPENSION
HIGH ANALYSIS

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With the Live Stock Men.

Dairymen.

Farmers and business men of Caruthers, Fresno county, are organized into a boosters' club. They are encouraging alfalfa sowing and have signed up 500 cows for a co-operative creamery.

Bakersfield gets morning's milk before breakfast by auto delivery instead of using yesterday's milk shipped in by train from the same ranches as a few months ago.

Railroads are to be relegated to the scrap heap. Tractors are the coming means of transporting live stock if W. E. Oakes, of Alameda county, extends his system far enough. Three Holstein cows, two calves, some rabbits, pigeons, etc., were transported by auto from San Leandro to his ranch at Crows Landing. The trip took five hours and the shock of transportation was very much less than by rail.

The Stanislaus cow-testing association reports tests of 40 cows which produced over 1½ pounds fat per day for February. Twenty-five of them are Holsteins. The annual meeting of the association will be held March 23 at Modesto.

J. McKinney, of Gilroy, has leased the Kingston ranch, near Modesto, for five years, and will move his dairy herd thither.

Dairying has been made part of the public school work of Polk county, Oregon. School rallies attended by teachers, parents and children are held. At a recent such meeting 100 children with others heard Prof. W. A. Barr, of the State Agricultural College, explain the relation of conformation of dairy animals to their productive capacity and constitution. Score-card work followed the lecture, which was given in a pasture with the cows.

New creameries are assured at Madera and El Centro, and a cheese factory is to be built at Gridley. The Butte County Creamery recently opened with latest modern equipment to make 1000 pounds of butter per day, using pasteurized cream.

Reduction of express rates ordered by the State Railroad Commission on milk and cream, effective March 15, is estimated to save \$14,000,000 a year.

Turlock is hoping to get the coast branch of the Utah Condensed Milk Company.

Insurance against tuberculosis by a tax of 25 to 50 cents per cow to be duplicated by the State, is a plan advocated by Dr. George Gordon at the State Veterinary Medical Association's convention held on March 11 at Madera.

The Ducor (Tulare county) Live Stock Association was recently organized.

Watson brothers, of Dixon, recently put in a \$1000 electric-air milking machine outfit by which 75 cows can be milked in two hours, two men attending the machines and one following to strip.

Triplet cows born April 15, 1911, have been offered to the University Farm at Davis by Mrs. M. Hildenger of San Jose.

Beef Growers.

W. V. Witcher, of Oakland, has purchased the Lloyd estate of 3960 acres in Stanislaus county, with cattle on it, the cost being \$100,000.

Miller & Lux and the Western Meat Co. wintered more than 20,000 head of

cattle in Nevada. They were returned early in March, some going to pasture, the rest to the stockyards.

San Joaquin county ranchers received 600 Mexican cattle last week, and they feel satisfied, in spite of the new export duty they were compelled to pay. George Devaney recently bought 2000 head, but had some delay over the duty.

Four hundred and forty pure-bred black-polled Angus calves were received at the Tagus ranch, near Tulare, last week. This is part of the 2000 expected. Pure-bred stock for market!

The U. S. Department of Agriculture is encouraging beef-growing in the Southeastern States.

"It is quite natural for sellers of beef cattle to send to the centers where inspection is rigid the best and surest of their stock, leaving the culls for markets where no inspection is carried on. What protection have the people of the rural district where inspection is unknown against the butcher who can buy, kill and sell without question?" according to Dr. George Gordon.

Sheepmen.

The Nevada Sheep Commission recently quarantined a section containing a quarter million sheep, near Eureka, Nevada, where the foot and mouth disease appeared about a year ago. Diseased animals will be killed in May.

Sheep-shearing began in Alameda county last week. The lambing season just past was the best in 45 years, and the feed is the best for 25 years.

South African wool of the light grades has a steady demand in London, one sale this winter being 3500 bales. Heavy grease wools are not wanted.

Permits for the grazing of 32,000 sheep in the Sierra and Sequoia National Forests will be issued.

Swine Breeders.

John Goodall, of Ceres, recently expressed two pigs from Massachusetts.

The Colusa County Swine Breeders' Association was organized March 17, especially to aid the state veterinarian's campaign against hog cholera.

Elias Gallup, who raised Poland-Chinas in Kings county in 1877 and since, has a complete set of the 62 volumes of Poland-China records. The University Farm at Davis has offered to buy them.

Horsemen.

H. C. Hinkley, of Yolo, has two Missouri jacks and a Shire horse newly purchased.

Dr. F. J. Anderson, inspector in the San Francisco Veterinary College, has decided to locate permanently in Lakeport.

Live Stock Sales.

Henry Wheatley, of Napa, sold a pure-bred Shire mare to H. C. Hinkley, of Woodland, and a Shire stallion to Thomas Dixon of Eureka, Nevada.

G. U. Clark, of Hanford, sold the Holstein Merryland Major De Kol, 125541, to V. W. Shore, of Tulare, where he will head a young herd of pure-breds. Other sales are as follows, taking all of his bulls down to three months of age: Merryland Legend, 125540, to Charles Church;

Merry Prince Charming and King of Dinuba 87618 to John Benedict; Max Barnum 125539, to P. G. Verhoeven.

Paul Lopes, of Tulare, auctioned his entire dairy equipment, March 19, including 90 Holstein milk cows, 45 heifers, 25 calves, 3 bulls from registered Holstein stock, 30 hogs and pigs, 2 mares, 2 horses, 1 three-year-old mare, and 1 two-year-old mare.

Pure-bred Jersey cows sold March 10 at auction for \$300 to \$400 each on the D. G. Whiting ranch in Imperial valley. Calves a few weeks old averaged \$85.

Receipts of cattle and sheep at the Portland stockyards were very light. Hogs were nearly normal. Cattle and hogs were higher priced.

WARNING TO HOG SHIPPERS.

The Geo. H. Croley Co., of San Francisco, calls the attention of how breeders shipping to the Hawaiian Islands or other Pacific points, to the fact that a certificate from the county veterinarian or live stock inspector should accompany the shipment, certifying there has been no hog cholera on or within five miles of their place during the preceding six months. Without this, the health officials of the port will not allow the animals to be put aboard any vessel.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

WILLOWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

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REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

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DUROC-JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, \$15.00 up. Ed E. Johnson, Turlock, Cal.

THOROUGHbred BERKSHIRES—Boars of all ages. Ricconi Bros., Mountain View, Cal.

TAMWORTHS. The finest bacon hog All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

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PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

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J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

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S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

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9 to 13 months old. In fine condition.

H. L. MURPHY
Perkins, California

Dairy Wastes Through Bloat.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

If comprehensive estimates were made on the subject, it is likely that the amount of money lost by the dairy-men though bloat each year would be a big surprise to most of us.

Why this should be, is hard to understand, for there are very few dairy-men that have not at some time lost animals in this way.

Usually the spring is the worst time for bloating, as the supply of hay is low by that time, and it is a great temptation to economize on hay by pasturing the fresh young alfalfa. With the feed dampened by rain and fog, the stock are most likely to be affected.

To enumerate the different remedies that one hears of, would require a much larger amount of white paper than the editor allows us, but it has become a prevailing opinion among good dairy-men, that the surest remedy is prevention.

Some find that by mowing the green

alfalfa and allowing it to wilt before feeding, they overcome the bloat difficulty. This soiling of crops is nothing new, but should be more extensively practiced by dairy-men who pasture, as there is very little chance of bloat, and the cows give as good a flow as when on pasture. The extra cost of cutting and hauling, is offset by the lesser amount of damage done to the fields, for it is undoubtedly hard on the alfalfa plant to have cows tramping over the crowns; and besides, there is a great waste of hay in pasturing that is overcome by soiling. When the alfalfa is about run out the damage to the field may not be so great; and in this case many dairy-men pasture some, but are careful that the stock is well fed with dry hay before being turned out, so they will not eat so ravenously.

If pasturing must be practiced, it will usually pay to have a man with the cows all of the time. Only recently we saw a case where a man had a purebred herd.

Some young bull calves were turned into a lot where the alfalfa was very poor and other grasses good. It was not thought at all dangerous to let them stay out all night, but in the morning one calf was dead that had already been sold for \$150. That much money would have bought a lot of hay, or have paid for an extra man to herd them for several months.

Similar cases occur almost daily; and it is apparent that as yet we have not come to the full realization of this loss.

Whenever pasturing of alfalfa, in order to realize the most from foul grasses in the first cutting is mentioned, it always brings to mind our favorite hobby, the silo, for if there is both a sure way of preventing the bloat and at the same time utilizing the weed infested first cutting of alfalfa, these cylinder-shaped storages surely fill the bill.

As yet we have only started to appreciate the silo in this respect, but it is not hard to determine, that in the future our bloat troubles will be very largely overcome by this method of pasturing.

COST OF RAISING HORSES.

The average cost of raising farm colts to the age of 3 years is placed \$104.06 by the U. S. Bureau of Statistics. Deducting the value of the work done by the horse before he attains this age, namely, \$7.52, the net cost is \$96.54. The average price received for such horses was \$136.17.

Itemized, the cost is made up as follows: Service fee, \$12.95; value of time lost by mare in foaling, \$10.06; breaking to halter, \$2.22; veterinary service, \$2.04; care and shelter, first year, \$4.98; second year, \$5.36; third year, \$6.35; cost of grain fed, first year, \$4.98; second year, \$7.14; third year, \$9.56; hay, first year, \$4.14; second year, \$6.61; third year, \$8.48; pasture, first year, \$2.56; second year, \$5.41; third year, \$6.21; other costs, \$5.07; total, \$104.06.

The total cost for all food is \$56.30, being \$21.68 for grain, \$19.23 for hay, \$14.18 for pasture, and \$1.21 for other feeds. The total cost of care and shelter is \$16.69. Of the total cost, 54% is charged to feeds, 16% to care and shelter, and 30% to other items, as enumerated above.

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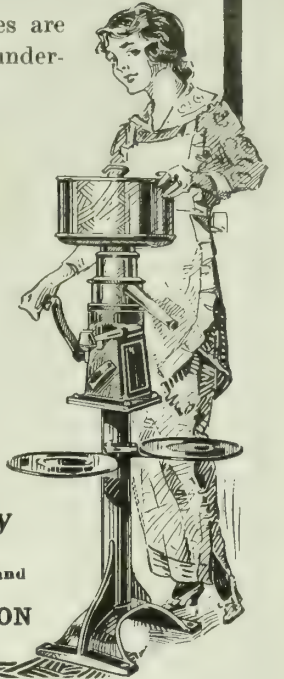
for catalog and further information. State how many cows you have and whether you wish to operate a separator by hand, electricity, gasoline or steam.

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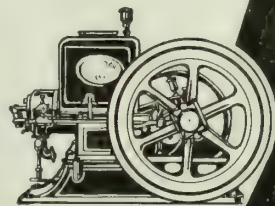
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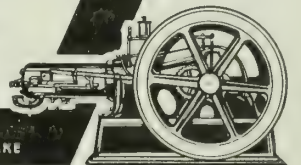
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CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

Notes About Horses.

[Written for the PACIFIC RURAL PRESS.]

FREE IMPORTATION OF PURE-BREDS.—Uncle Sam wants us to have better horses, to the extent that he grants free admission to all pure-bred animals.

THE MENACE OF GLANDERS.—A few years ago a drayman of San Francisco had two horses affected with glanders which were killed. The State veterinary board tested the rest of his eighteen horses by the standard means and found fourteen more or less affected internally. Of course the man did not want his business wiped out, the State had no law providing him compensation such as all fair-minded people would be willing to grant, and yet even the horses suffering from internal glanders were likely to transmit the disease to their fellow workers on the streets. It was plainly a menace to the valuable property of others, yet the court granted a permanent injunction, based on the law of course, preventing the destruction of the diseased animals without their owner's consent.

A case of glanders exhibiting the external symptoms is easily disposed of; it must be reported to the State board, as soon as observed, and the animal must be kept off the streets.

The work of the Board in finding the cases and destroying large numbers with the owners consent, has been vigorously prosecuted. Of the thousands of horses in San Francisco, only one case was reported last month. Authority to destroy all affected internally and externally with some compensation to the owners, would be welcomed by horse owners.

EARLY BREEDING.—While breeding mares at an early age is to be discouraged on account of its stunting effect on the mare, this seems to be less pronounced in California where early maturity is gained on account of the mild climate. Henry Wheatley has a mare which foaled at three years old. The colt sold for \$1500 before he was two years old. The mother's second colt came when she was four, and she weighs over a ton now.

GRAY A DESIRABLE HORSE COLOR.—The color of warships bears an important relation to the comfort of the men inside of them; it is reasonable to believe that the color of a horse in hot times bears a very important relation to his utility, the white ones reflecting the heat which darker ones absorb.

This seems to have become a standard idea in the Hawaiian islands to which a San Francisco exporter used to sell mules. He declares that the light colored ones always sold most readily and at the best prices.

Of course white horses are hard to keep in condition for the streets, and are rather harder to sell on that account, but the beautiful dappled gray combines the neat appearance and resistance to heat in a way which makes him a favorite with buyers, especially for warm climates.

EXAMINATION OF STALLIONS.—The Wisconsin stallion law for eight years allowed the soundness of stallions to be vouched for by affidavit of the owner, hoping that owners would voluntarily retire unsound stallions from service. This hope was largely realized, but the 1913 law requires

careful and thorough examination by a legally qualified veterinarian to be paid not more than \$5 by the owner. Personal veterinary examination is required in California.

RUNNING A HOTEL FARM.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The average person would not suppose that hotel-keeping and farming held enough in common to warrant any co-operation, yet the owners of the Potter Hotel, at Santa Barbara, are finding it profitable to own and run a 300-acre ranch about nine miles from town, which derives a part of its profits from the hotel. It is hard to distinguish which is more important, the hog lots or the dairy, for both work into the general scheme of things so nicely. The main reason for the dairy is to supply pure milk to the hotel for its guests; but as about 100 cows are milked, there is an oversupply which finds a ready market at an extra good price.

Heretofore alfalfa has not been grown in very large quantities, it being the custom to pasture on barley for green feed. Corn does well, so two 210-ton silos were erected, and these furnish silage the year round. By raising root crops and feeding dry-beet pulp, the system allows continuous milking all through the year.

A substantial milking barn with cement floors and lots of light and ventilation, coupled with a sanitary milk-house, makes it possible to turn out a thoroughly sanitary product, which is hauled into town twice a day on an auto-truck.

Grade Holsteins are used and these are bred to a pure-bred bull. Only the calves from the best cows are raised, the others being sold to the butcher.

Most dairymen who sell whole milk do not raise many hogs, but here is where the hotel helps most, for while there is not much skim-milk, there are usually about 600 head of hogs maintained on the ranch, the principal feed being the refuse from the hotel. Ordinarily there is a large amount of this swill, which is hauled out once a day on an auto-truck. Grading or sorting of this refuse is done by the cooks at the hotel, one can being for meat, another for potato peelings, while the rest is dumped all together, except fish, which is not considered desirable for the hogs. After reaching the ranch, the meat and potato peelings are cooked, and then fed on a cement floor with whatever skim-milk there may be. The feeding troughs are made by sinking thick boards edgewise into the cement, a moval end being built in so that they can be easily cleaned off with water. Drainage is provided by a small creek near by. The feeding trough is situated some distance from the other hog quarters, so that it is easy to keep everything clean. Through careful handling of the swill in this way, there has never been any sickness in the herd, and the returns from that part of the ranch, which are by no means small, are almost entirely pure gain.

Thus by running the ranch the hotel is assured of good pure milk; and in return the hotel does its share toward supplying hog feed to the ranch, making in all a very profitable proposition.

Guaranteed, Guaranteed, Guaranteed

THE CALIFORNIA BREEDERS' CONSIGNMENT SALE OF REGISTERED JERSEYS WILL BE A NEW DEPARTURE IN AUCTION SALES.

Every animal will be sold under a written guarantee of soundness, etc. 96 head all purebreds. Over 70 females. Many of them with Register of Merit Records. Several Blue Ribbon and prize winning animals are offered. Noted bulls such as King Polo of Bleak House, Gertie's Son, Marquis of T will be sold. Be There

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Our Stallions at from \$1000 up can't be beat anywhere.

We furnish breeding books at 75c. each.

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References: American Natl. Bank, Pendleton, Ore. Merchants Natl. Bank, Portland, Ore. Bank of Yolo, Davis, Cal.

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ATTENTION, SHEEPMEN

My pure-bred, range-raised yearling Shropshire and Merino rams will be out of mountains about April 15 and ready for inspection at my place.

Shropshires sired by rams imported by me from England in 1911.

AN EQUINE BETRAYER.

A horse was the detective which led federal officers last week to discover a large quantity of colored oleomargarine on which it is said the Government tax had not been paid, and to arrest Walter R. Morris, a producer dealer, in St. Louis.

Federal officers raided what is said to have been an illicit oleomargarine factory located in a stable in the fashionable residence district, arrested Joseph B. Musick, the sole occupant of the factory, and confiscated about 65 tons of colored oleo.

The officers then loaded with oleomargarine a wagon found at the factory and allowed the horse, also found there, to proceed without guidance. They declared the horse pulled the wagon without guidance a distance of two miles to Union market and backed it against a creamery stall owned by Morris. It is charged that two wagon-

loads of colored oleomargarine, on which a tax of \$600 should have been paid, were found in the stall.

The tax on the 65 tons of product, if paid, would have amounted to approximately \$10,000.

DELAYED FREIGHT.

We often hear of freight aggravatingly delayed, but the worst we ever heard of is a trainload of lambs that grew to sheep before they were placed on the market after leaving their pasture in western Colorado for Stockdale, Ill., in May, 1908. This was the basis of a suit instituted in the District Court last week against the Rock Island Railroad Co. The number of sheep involved is 22,334, for which judgment of \$633,926 is demanded on the ground that the railroad company kept the lambs without trying to market them until they had grown into full-fleeced sheep.

State Veterinarian and Hog Cholera.

In order to combat the loss of \$2,000,000 in hogs in California last year through cholera. State Veterinarian Charles Keane has worked out a plan of Statewide immunization of hogs against cholera by vaccination with anti-cholera hog serum.

County associations of hog raisers would be formed throughout the State and under the auspices of these associations, all the hogs in a county will be given the serum at the same time.

Heretofore the serum has been the means of further spread of cholera, for by only immunizing small bands of hogs at a time, each animal during the period of vaccination was a source of infection to every hog that had not been treated with the serum.

Keane believes the losses through cholera mostly is responsible for the present high cost of pork.

Keane estimates the loss in the United States last year through cholera reached \$100,000,000 for not a single State is entirely free from the disease.

The first county association will be formed in Colusa county in the first part of March, when a meeting has been called by State Veterinarian Keane.

LUMPY MILK.

Lumpy milk is frequently due to infection with germs which gain en-

trance either through the milk ducts in the teats or are carried to the udder in the circulation from other portions of the body. Excessive feeding with large grain rations seems to have a part in causing the trouble, in some cases. In the absence of competent local veterinary help, give a moderately light, laxative diet, with a reasonable amount of exercise. Reduce the grain feed temporarily at least and give the udder long-continued hand rubbing and gentle massage. A mild physic may be very helpful. The dose may be from one-half to one pound of epsom salts, dissolved in three pints of water and given as a drench, the exact dose depending upon the size and condition of the cow.—University Farm, St. Paul.

WOOL SEEMS SCARCE.

A recent issue of Bradstreet's financial journal indicates a happy future for sheepmen:

"Strength at the London sale and scarcity of domestic wool has given the Boston market an upward turn. Manufacturers are steadily buying fine merinos and cross-breds, and also picking up lots of domestic wool wherever they can be found. A late estimate gives the total domestic available in that market as not over 5,000,000 pounds, which is the smallest stock for years. Some houses have nothing but odds and ends left. Contracting is going on in the West, the total tied up being estimated at over 30,000,000 pounds. Prices paid are fully up to last year's level, and in many cases higher. Most business this week has been advanced. Foreign receipts total over 5,545,000 pounds. This makes the total receipts of foreign since January 1, 37,145,254 pounds, against 18,714,322 pounds last year."

SILAGE.

To the Editor: What kind of silage would burr clover make, and what would be the most profitable time to put it in, and would it be absolutely necessary to chop it up? What kind of corn would you advise to plant in this part of the State for silage, and about what would be the best time to plant and cut for that purpose? When filling the silo, could I put in clover in the spring, and later something else on top of clover?—M., Pinole.

[Who has burr clover? It would need to be cut in for close packing. The corn which is best is the one which makes the best growth with you. It is a local question which we cannot answer. Plant after danger of frost is past and cut when the ears begin to glaze. You can fill a silo in two jumps, but clear off the top down to good stuff before you start in the new.—EDITOR.]

BACON RIND FOR RABBITS.

To the Editor: I recently read in your valuable paper an article on how to keep rabbits from eating the bark of young trees. I know of hundreds of dollars spent in fences and wire and all sorts of preventives. How can be saved by using common sense. To keep rabbits from barking young trees, take a strip, 2 or 3 inches wide by 4 or 5 inches long, of the skin of smoked ham or bacon, and just rub

DE LAVAL CREAM SEPARATORS

are not the mail order or agricultural implement kind

THERE ARE SEVERAL KINDS OF CREAM SEPARATORS, but De Laval Cream Separators are of a kind that puts them in a class by themselves.

DE LAVAL CREAM SEPARATORS ARE MADE BY THE best engineers, with the best equipment from the best materials, by the best workmen, and in the best shops of the kind in the world, all devoted solely to the production of the best cream separator.



THEY ARE NOT THE KIND OF separators mail order houses contract for wherever they can be made cheapest, nor the kind that agricultural implement concerns manufacture along

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DE LAVAL CREAM Separators are the kind 98 per cent of the creameries use, where any loss in quantity or lack in quality of product means business ruin, as it always has

ultimately to every creamery that did not replace an inferior Separator with a De Laval.

PRECISELY THE SAME KIND OF DIFFERENCES EXIST in farm as in factory separators and precisely the same reasons apply to the use of cream separators on the farm as in the creamery, though they may not make or break the farmer as they do the creameryman where the farmer has other crops and products to rely upon.

THE DIFFERENCE BETWEEN DE LAVAL AND THE mailorder and agricultural implement kind of cream separators are fully set forth and made plain in a De Laval catalog to be had for the asking, while the machines themselves best tell their own story placed side by side, and that every De Laval local agent is glad to afford any prospective buyer the opportunity to do.

If you don't know the nearest De Laval agent, simply write the nearest main office as below.



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WILL RELIEVE YOU.

It is penetrating, soothing and healing and for all Sores or Wounds, Felons, Exterior Cancers, Burns, Boils, Carbuncles and all Swellings where an outward application is required CAUSTIC BALSAM HAS NO EQUAL. Removes the soreness—strengthens the muscles.

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Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

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4 Brood Mares

3 bred to a Jack—Price \$175 each
1 bred to a Horse—Price \$150
ALL IN FOAL
Average weight 1400 lbs.

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it up and down the butt of the tree for 3 feet or so just once, the fat toward the tree. Wild game generally is very sensitive, and the odor will keep them away for at least three months. If this is done twice a year at the right time, no trouble need be anticipated, but you will laugh at the simplicity of it.
A. A. W.
Monterey.

A Machine-Run Dairy.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Machinery is coming more and more into use on the farm as elsewhere, but there are few places where it is used so extensively as on the Wilder dairy near Santa Cruz.

This is one of the largest and best known dairies in Santa Cruz county, as more modern methods have been pursued for many years. Use of registered Holstein bulls for the last 25 years, and testing the cows more or less, all of the time has resulted in a high producing herd.

The first urgent need of power on this place was when it was decided many years ago, to start a small creamery. As there were many good springs among the hills of the ranch, it was decided to use water power.

Accordingly a 1,000,000 gallon reservoir was built some distance from the buildings on a high point. From there the water is piped to the buildings and as the size of the pipe is reduced along the way, it gives a pressure of nearly 90 pounds at the house.

By having a large water wheel at the creamery, all of the machinery there is furnished with power, including the churn, a two-ton ice machine, and a dynamo which furnishes electricity for the entire ranch.

Other work which is done with smaller water wheels is the running of a barley crusher and feed grinder, a wood sawing outfit, a modern machine shop including a lathe, the forge in the blacksmith shop and saws in the carpenter shop.

The latest addition to the machin-

ery, was a four unit milking machine outfit. These were installed three months ago as an experiment and have proved very satisfactory.

There are 160 cows being milked at present, of which 80 are milked by hand and the balance with the machines. Two men operate the four machines, and milk 40 cows each, but owing to the distance from the milking barn to the milk house, it has been necessary to hire a third man to carry the milk from the machines; however, with the extra help, about 90 cows will be machine milked.

As the hand milkers are only required to milk 23 cows, there is a big saving of labor in favor of the machines, and the upkeep has been very light. In fact, the expense of running most all milking machines is very small.

So far as can be judged at this time, the returns from the 80 cows milked with the machines has been as large as from the hand-milked cows, and as they are all handled in exactly the same manner otherwise, it is thought that the machines will soon pay for themselves on the labor saved.

There are large numbers of our mountain ranches where the work could be very much simplified, by controlling the water power in the same manner as on this ranch instead of allowing it to go to waste.

KEEPING DAIRY UTENSILS CLEAN.

[Written for the PACIFIC RURAL PRESS.]

Good ventilation, sunlight, and protection from flies, is a serious question that many dairymen encounter with their tinware and separator parts, at most all times of the year in this State.

An efficient and economical way to obtain all of those things has been made by a large dairyman, who found it almost impossible to keep that part of his equipment sweet and clean, on account of the flies.

The arrangement is a frame, made of two by three pine boards about seven feet high. Six of these are used as up-rights, one on each corner and two in the center.

This frame work is made four feet wide, and 12 feet long. Tongue and grooved lumber makes a floor about 18 inches from the ground. Three feet above this, is another floor or platform and above that the same kind of lumber is used for a roof. These platforms are all painted white to insure cleanliness, and on the two lower ones a set of slats, is used to raise the utensils from the solid floor.

A set of screened doors is used, to enclose one side, that also allow access for taking out or putting in the cans. The other side and the two ends are enclosed with a galvanized screen. This makes it a place where the utensils can be set when not in use and get the benefit of sun light, and ventilation with no fear of flies.

Being built close to the milk house, it does not require any extra labor in carrying things back and forth, and seems to be even better than the practice of screening in shelves, which protrudes from the edge of windows in the milk houses.

Most of the cost for such a contrivance is in the building, but where sanitation is any object such things soon pay for themselves.

AWAKENING THE SOUTH ON BEEF.

The declaration that "the South for a long period is to be the country's principal source of cheap beef" is made in a statement submitted to the House

Committee on Agriculture by George M. Rommell, chief of the animal husbandry division of the Department of Agriculture.

"No Northern farmer or other farmer," added Rommell, "can raise beef at less than 5 cents a pound, but we have and are doing that in Alabama."

Salvador Stock Farm Shire Horses



Don't Sign That Note for \$3000

I will sell you a better horse for half the money.

HENRY WHEATLEY,
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America's Leading Horse Importers PERCHERONS



"Our recent importation arrived at our Oakland stables March 1st. This shipment comprises the best lot of stallions ever shipped to the Pacific Coast. Every horse in the lot is sound, young, stylish and of the best conformation."

At the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons; two Second Prize ribbons, and other honors.

If you want the BEST let us hear from you."

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the most modern development in animal medicine is easily and safely given—exact dose—quick results—do not deteriorate—always on hand for emergencies. Put up as follows:

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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, fresh, reliable; preferred by Western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills \$1.00. 50-dose pkg. Blackleg Pills 4.00. Cutter's Blackleg Pill Injector 1.50.

Discounts: 250 doses, 10 p. of 500 doses, 20 p. of 1000 doses. Every package dated, unused pills—exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order promptly. Send check or M. O., we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.

BLACK LEG VACCINE

FOR THOROUGHBREDS, should be, for greater safety and protection the "double" form. No. 1 dose, slightly weaker than regular vaccine, is safe to use on thoroughbreds, and prepares them for No. 2 dose, which gives full protection. Cutter's Blackleg Pills, Double, \$1.00 per package, 10 double doses, one gallon vaccine preference is California breeders of thoroughbreds. Insist on Cutter's. If unobtainable, order direct. Send for booklet. The Cutter Laboratory, Berkeley, Cal., or Chicago, Ill.

American Centrifugal Pump

Our special improved runner which is a distinctive feature of the American Pump is guaranteed to save the thrifty farmer power.

MUNCIE FUEL OIL ENGINE

The Muncie Fuel Oil Engine is today running on California fuel oil. See one working in your own locality.

The Muncie is not an adaptation of a gas or gasoline engine. Designed, built, and guaranteed for oil only.

THE IDEAL PUMPING PLANT
is a combination of an American Pump and a Muncie Engine.
The Twentieth Century Farmer needs them both.

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WAUKENA STOCK FARM

Offers some choice Poland-China gilts, both bred and open. All full sisters to one a breeder offered me \$75 for at 12 months old. \$10 up.

CHAS. N. ODELL, Modesto, Cal.

GRAIN IRRIGATION DOUBLES YIELD.

The irrigation investigations of the United States Department of Agriculture has collected some figures relative to the irrigation of grain, near Woodland, Yolo county.

Over 2400 acres of grain were irrigated last season in the territory around Woodland, most of which was barley. The Alameda Sugar Beet Co. irrigated 500 acres of oats, 300 acres from the Yolo Water & Power Co. ditch and the remainder from pumping plants. A small acreage of wheat also was irrigated near Woodland.

The average amount of water applied to the grain this year is estimated at slightly more than 1 acre-foot

per acre, with an average cost for water alone from all sources of about \$1.63 per acre. The average yield of irrigated grain was about 24 sacks to the acre, while the unirrigated grain would average only a small fraction of this figure. The irrigated oats yielded more than 2 tons of hay to the acre, while the wheat averaged about a ton and a quarter of hay to the acre.

A particular study was made of Albert Hannum's barley field, including a survey of the tract, determinations of the physical features of the soil and measurements of the discharge of the Nicholson pumping plant, from which it was irrigated. This field was irrigated in a very scientific manner, the plan including the running of main furrows along contour lines from the

ditch, with parallel furrows radiating therefrom. The young barley was irrigated during the latter part of March, with an average application of 0.99 acre-foot per acre. The grain yielded about 21 sacks to the acre, or about double that of unirrigated fields.

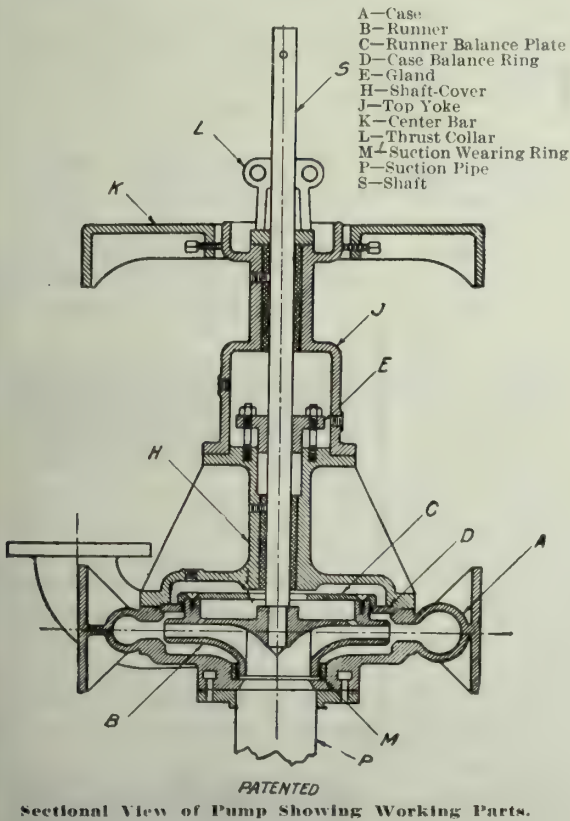
IRRIGATION EXPERT COMMANDS HIGH SALARY.

Having been offered the highest salary provided for any professor in the University of California, the distinguished irrigation engineer and agricultural statesman, Elwood Mead, recently accepted an invitation to become Professor of Rural Institutions in the University of California. For five years past he has been in Austral-

ia as chairman and chief engineer of the Rivers and Water Supply Commission of the state of Victoria. But when Professor Mead tendered his resignation, the Australian authorities promptly offered him three times the annual salary to be paid him by California, and not only that, but the Premier of Victoria wrote a long personal letter to President Wheeler appealing to the University of California to release Professor Mead, on the ground that the vast affairs of irrigation and agricultural development committed to him in Australia would suffer irreparably if his guiding hand should be withdrawn. The Regents of the University have regretfully consented that Professor Mead shall remain in Australia.

Jackson Newly Improved Bottom Suction Pump

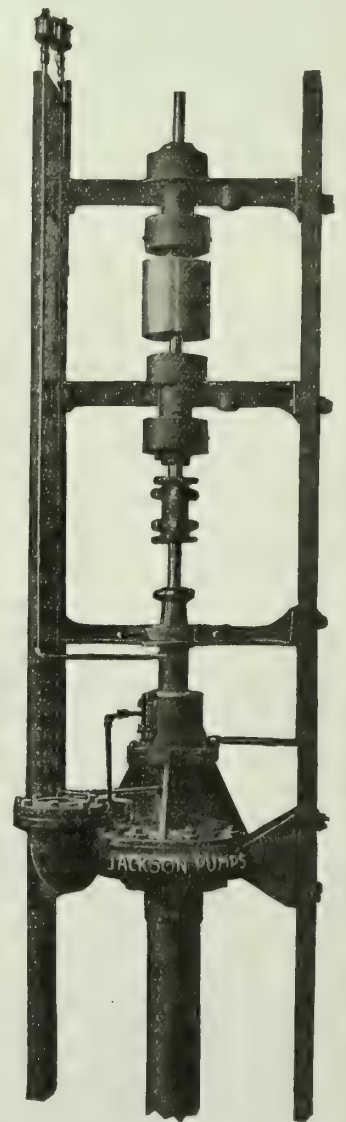
In placing this type of vertical pump before the public, we do so with a view of providing an additional line of vertical pumps intended for the more shallow pits, as they occur in great number. We manufacture this pump purely at the request of many of our friends, who have been acquainted with the different types of Jackson Pumps for years and who prevailed upon us to manufacture a pump at a more moderate price than our standard heavy duty vertical top suction pump.



If a perfect hydraulically balanced centrifugal pump means anything, it indicates an absolutely frictionless machine, operating with the highest possible efficiency, without any grinding or wearing out of parts. By consecutive tests it has been shown that with our 1912 balance; we are capable of carrying almost any weight that may be encountered by shafting and other fittings, which make up the revolving parts; it is sustained entirely on a water film, which in the past has proven so successful in all pumps of our make.

The parts that make up the balancing device are identical with those on the horizontal pumps and, if anything, these pumps are even more accessible, because they are dismantled from the top. By merely taking off the top cover, the impeller with stationary balance ring can be lifted out.

The suction ring on the impeller is of extra length and it is arranged to revolve within a renewable white iron wearing ring provided in the bottom cover of the pump.



PATENTED
Bottom Suction Pump in Wooden Frame.

If you will just remember that combined with these advantages is the Jackson quality of material and workmanship, your pumping problems can be more easily solved.

Our Bulletin No. 47-D tells the whole story.

Byron Jackson Iron Works, Inc.

357-361 MARKET STREET,

SAN FRANCISCO, CAL.

Los Angeles: 212 North Los Angeles St.

Works: West Berkeley, California.

Co-Operation in the Poultry Business.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Co-operation is a word with a much wider meaning than is generally given to it. Of course, it has a greater sphere of usefulness in buying and selling, thus reducing cost of production and raising the profits on the selling end. This is quite important in these days, but it is only one side of a subject as broad and wide as the universe. The point I am going to make is to show you how co-operation will help the beginner to reach success.

I am often asked what is the best way to start in the poultry business and when. The first question is much harder to answer than the last, and this is because people very rarely tell enough to a second party to give material to judge from. Then again, if a person writes to another and asks for a lengthy letter of details without any consideration either in payment or trade, he will not get it.

CHOOSING THE BREEDING STOCK.—But if, after reading reliable poultry literature (by reliable is meant such papers and poultry journals as engage practical men and women to write for their readers the results of experience; a great many publish nothing but theories written by those who don't know a chicken from a jackrabbit)—if, after reading all they can of the best poultry literature, and feeling that they want to make a start in the poultry business, the very first thing they should do is attend one or more poultry shows, if it is show season.

To attend a good poultry show with a desire to learn is of great benefit to an amateur. Here he can compare one breed with another; he can see all the different colors, and by using good judgment in asking questions he can learn much about all of them that will put him on the right track. But the wise man will not purchase at the show, unless he really knows what he wants and can afford to buy it. The man with a limited amount of money will take the address of those exhibiting the breeds he is interested in; and when he is ready, write to them.

Any reliable breeder will be glad to co-operate with a possible customer by advising what would be best at that time of year.

Not all poultry breeders are honest, but I believe that as a business there are fewer dishonest men in the poultry business than any other. If a person writes for information and tells a breeder just what he wants and how much he can pay, and trusts the breeder to do the best he can for that amount, I believe he will get his money's worth, because he puts the seller on his honor, and very few men or women will allow themselves to do anything to smirch that.

EGG LAYING CONTEST LED ALL THE WAY

At the Napa Egg Laying Contest our pen finished second, 66 pens competing. In our own class, **White Leghorns**, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

BLOM & SON, Napa, Cal.

At this time of year I always advise a person to buy a few rather broody hens, if they can be obtained; then hatch eggs from pure-bred stock with these hens, which can be used for table purposes after the chicks are raised.

A good start can be made at a very small cost in this way, and before you know it you have some well bred poultry such as you could not afford to buy.

HATCHERY CHICKENS.—If you are absolutely proof against pure-bred stock, and a chicken is nothing but a chicken in spite of feathers and big egg records, then the hatchery man stands ready to co-operate with you once or twice a week. He will give you all the utility breeds for about 15 cents per chick, and you can buy as many or as few as you like. In this way you can get a start very cheaply, for you can make a fireless brooder and raise your hatchery chicks in that with the crumbs from your table and a little chick feed.

There never has been a time when a person had so many people ready to co-operate with him in starting a business considered of such growing importance as to be taught by an international correspondence school.

Some of the brightest and best men and women in the United States are taking up the poultry business as a life work.

But these men and women are being trained for the work; some of the faculty are read practical working poultrymen, and one of them has invented one of the best medium-sized hovers that I have ever seen.

FARMERS AND POULTRY.—Poultry on the farm used to be considered just a nuisance that the farmer endured for the sake of a few fresh eggs, which somehow he rarely got except when any old hen could lay; but the advancement of the poultry business, as a means of making not only a living but a competency, has made the farmer take notice, and now it is quite common for the farm to boast of exhibition stock in which the whole family take pride.

And on the small farm or orchard is the real place for the fancier. Here Nature co-operates with the rancher to produce the very finest color, bone, and all the excellent qualities that go to making show stock. The rancher can have green feed, if only a bed of lettuce, all the year round, and he always has some waste feed that hens can use to advantage, and he can always have fresh eggs and something for his family to make up a fine dinner with, and that without running to town and contracting a butcher bill.

And the women folks of the family take especial pride in the poultry, so that the farmer is paid in many ways for investing in good stock. It is an all-around family co-operation; and it is the same when they take up pigeons. The old scrub sort that are allowed to fly all over the neighborhood, getting shot for somebody else's pot pie, were of little or no interest to the family; but let the farmer buy a few Carneau or English Runts, and watch how the family take notice and commence to feed, and take their visitors to the pigeon coop. It's human—we all like

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

ORDERS TAKEN for day-old chicks and eggs for hatching from the following breeds: White Leghorns, Buff Orpingtons, White Wyandottes, Rhode Island Reds, Black Minorcas, Barred Plymouth Rocks and Light Brahmas. All good laying stock. Eggs \$1.50 per 15; White Leghorn day-old chicks \$10 per hundred, and all other breeds \$15 per hundred. For further information address Mrs. I. H. Tuttle, Box 473, Watsonville, Cal.

BABY CHICKS all sold for season! Special on eggs for February: MacFarlane strain White Leghorn, \$1.50 per 15; \$2.50 per 30; \$6.00 per 100; \$50.00 per 1000. Owen Farm and Fishel strain White Plymouth Rocks, \$2.00 per 15; \$4.00 per 30; \$10.00 per 100. MacFarlane strain White Leghorn cockerels, \$3.00 each; \$30.00 per dozen. Ten acre plant, 15,000 square feet under roof. Address Dept. 2, Newton Poultry Farm, Los Gatos, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities. \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, San Luis Obispo County, Cal.

OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for March, \$10; April, \$9; reduction in quantities. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

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BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. Bihn, Santa Clara Valley Hatchery, San Jose, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

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FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

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S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BARRED ROCKS ONLY—Am booking orders for eggs and chicks for March delivery. Send for folder. G. L. Hawley, Madera, Cal.

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LIGHT BRAHMAS. Breeding stock for sale. Eggs for hatching \$2.50 per setting. Box A. B., Pacific Rural Press.

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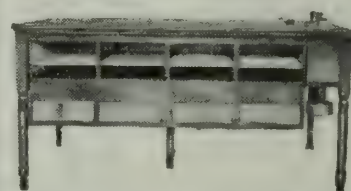
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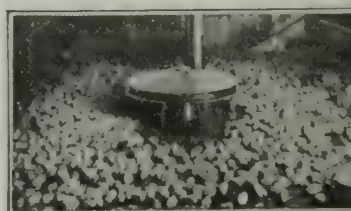
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to have the best—and the best is none too good for the farmer and his family. The earth and all that it brings forth belongs to him, but he will never get it until he claims it. The farmer who selects the little apples and the runt pigs and vegetables for himself and family, can be excused only if he is heavily in debt and struggling to get free. Even then he is robbing himself and family through mistaken ideas, but he will eventually have to claim his reward. Yes, sir; I have found out from experience that Nature co-operates best with those who love her handiwork and claim it for their own.

LOVING THE POULTRY GAME.—It is well known that flowers will grow and respond to the care and culture of some people better than others, and this same thing exists all along the line; some men will raise better fruit than others, and some will raise better calves and hogs, and this something that the things we call dumb have a sense of recognition for the hand that works with them lovingly.

So before going very largely into the poultry business, try it out on a small scale; but do get good stock to try with, if it is only one setting of eggs. In this way you will soon find

whether you have the qualities that will build success with all the finer forces of Nature co-operating with you.

ASSOCIATING WITH OTHER BREEDERS.—And speaking of co-operation in buying and selling, the Poultry Breeders' Association of Southern California is growing by leaps and bounds. This commercial side is an infant of the Fanciers' Association. The breeders recognized their own ability to conduct a business of this kind without the aid of so many middlemen; and they formed the commercial plan and paid for the shares at so much on a case of eggs sent in. Now they are handling everything the poultry man needs, even to leg bands. Their growth has expanded so that they now have to move into large commodious quarters on Los Angeles street. I shall soon visit them and get a lot of facts for our readers.

POULTRY POULTS.

Turlock thinks she is becoming an important poultry center. The largest shipment of poultry ever made was 900 chickens recently sent to San Francisco.

An exchange says that "dirty eggs brought to market reflect the character of the people who bring them. Eggs should not get dirty even in the nest."

Eggs recently sold at Fresno for 17½ cents per dozen, hens there having awakened too late to the importance of 50-cent eggs.

A steamer reached Vancouver March 8 with 3,500,000 Chinese eggs consigned to points in the United States.

A new Tulare county chicken farm recently started business with 2800 white Leghorn baby chicks.

The Wisconsin legislature insulted their poultrymen by appropriating \$800 for the poultry exhibit at San Francisco, 1915. The total live stock appropriation was \$75,000. Poultry is a special separate and growing department at the Wisconsin College of Agriculture.

Another exchange says that keeping the males separate from the hens except in breeding season does not harm the active breeds, but very often renders males of heavier breeds impotent.

The Sebastopol Poultry Producers' Association recently contracted the season's output to the Hilmer company.

Feather River canyon is to have pure-bred domestic poultry feathers of White Orpingtons on a ranch at Big Bar. It is said that the river was so named on account of the wildfowl feathers which covered its waters at certain seasons in the early days.

Petaluma is already planning her Panama-Pacific exhibit. The financing end was considered at a joint meeting of the members of the city council and the chamber of commerce.

At a recent meeting of the executive board of San Mateo County Poultry Association, the directors selected November 12 to 15, inclusive, for the third annual poultry show. The secretary of the association is A. R. Schroeder, San Gregorio, Cal.

Chinese eggs are produced mostly between February and May. The desiccated-egg factory at Nanking bought eggs last October at 8 to 10 cents per dozen. Canned eggs from Nanking and Hankow are shipped to Europe. Workmen in these factories receive about 10 cents per day.

PUBLISHER'S DEPARTMENT.

A B C OF BEE CULTURE.

The new edition of the standard book in bee culture is larger, better and brighter than ever. We note that the authors, A. I. and E. R. Root, say that this edition makes 146,000 copies of the book published. A B C and X Y Z of Bee Culture is a cyclopedia of everything pertaining to the care of honey bees and the accessories to beekeeping. The book contains over 700 pages, is handsomely illustrated and bound. As the A. I. Root Co. has established a Western office in the Holbrook building, San Francisco, our readers may get quicker service by addressing their letters to them instead of Medina, Ohio.

Naturally the office force joins with the editor in feeling proud of this

issue of the PACIFIC RURAL PRESS. Not only does it carry more pages, but has more advertising and will go to more people than any issue printed since its inception over forty years ago. We are doing all we can to make a good paper for California farmers, and in turn our patrons are supporting the efforts generously.

Our new book, "One Thousand Questions Answered," seems to have struck the needs of California farmers. Every mail brings orders from our readers for copies of this book. Those who have secured it are sending us enthusiastic letters of commendation. One reader came to our office and stated that he thought this the most valuable to California farmers of any of the series by Professor Wickson. You should have a copy. Price \$1.50 postpaid. Send for our special subscription offer in connection with the book.

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1639 Market Street,
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The Home Circle.

Some Good Recipes for the Sick-Room.

Tapioca Jelly—Two tablespoonfuls of pearl tapioca, one-half cupful of cold water, one-third cupful of boiling water and a few grains of salt. Soak tapioca in cold water for several hours or overnight; put it with boiling water, and add salt and cook in double boiler two hours. Serve hot with cream, sherry and powdered sugar.

Beef Jelly—One-half pound of lean round beef, one-half teaspoonful of granulated gelatin, one teaspoonful of cold water, one and a half tablespoonfuls of boiling water, salt to taste and a few grains of pepper. Broil the beef slightly and press the juice out with a lemon squeezer. Soak the gelatin in cold water and then dissolve it in boiling water; add it to beef juice with salt and pepper. Strain through double cheesecloth. Mold, chill and serve on day it is prepared. A touch of celery salt or paprika instead of common pepper will give this variety.

Chicken Jelly—Use a pound and a half of chicken, or a half a pound of an old fowl. Put it on the fire in two and a half cups of cold water, with salt, pepper and a celery stalk. In preparing the chicken remove the fat and skin and cut flesh and bones in small pieces. Let it come slowly to a boil, removing scum as it rises, then put it on back of stove and let it simmer until the meat is in rags and all the substance is out of the bones. Strain through double cheesecloth, season to taste with salt and let it stand until firm. Then remove all fat, reheat and turn into individual molds and put them on the ice. In cooking the liquid should be reduced to one cup. Parsley is often preferred to the celery taste, but as the flavor of the herb is so delicate it must be put in when the chicken is almost cooked.

Six Variations of Cream Pie.

I wonder how many housekeepers are aware of the variations of plain cream pie made as follows? For each pie, one cup of milk, one cup of sugar, one tablespoonful of butter, well beaten yolks of two eggs, one tablespoonful of cornstarch. Cook until thick, flavor to taste, and put into crust previously baked. Beat whites of two eggs until stiff. Put two tablespoonfuls of sugar in, put on pie and set in oven until brown. These are my variations: When filling is cooked stir through it one scant teaspoonful, each, of ground cinnamon and cloves. This is our favorite and we call it "spice pie." **Cocoanut Pie**.—Grate two heaping tablespoonfuls of cocoanut in the whites of the eggs. **Chocolate Pie**.—Grate two heaping tablespoonfuls of chocolate to each pie, and cook in the filling. **Banana Pie**.—Slice two bananas into baked crust, then pour filling over same and bake as directed. **Orange Pie**.—Prepare same as banana pie, using oranges instead of bananas. **Nut Pie**.—Cook fillings as directed, reserving a few to dot the top.

During the MacDowell Music Festival last summer in Peterboro, N. H., a waitress of The Inn, where the orchestra was entertained, rushed in distress to the wife of the proprietor ex-

citedly, exclaiming that "one of the orchestra men can't eat meat!" "Why not? Is he ill?" "Oh, no, but he is a Unitarian!" "A Unitarian? Why, Unitarians eat meat." "Well, maybe it's a cemetarian!" "Oh, you mean a vegetarian!" "That's it," exclaimed the girl, "I knew it was something religious with 'tarian' on the end."

An Unexpected Answer.

A kindergarten teacher was recently reviewing her little class in the instruction given the day previous. The following are a part of the questions and their answers:—

Teacher: "Now, children, I told you yesterday about the various materials from which your dresses are made,—silk, wool, and cotton. Let me see how well you remember. Margie, where did the material come from of which your dress is made?"

Margie: "It once grew upon the back of a sheep."

Teacher: "Very good. And yours, Blanche?"

Blanche: "My dress once grew upon the back of a sheep, and a part of it was spun by the silkworm."

Teacher: "Correct! and yours, Lucy?"

Lucy (with evident embarrassment): "My dress was made out of an old one of mamma's."

Spelling Not His Forte.

There is a young fellow in a wholesale house who is not particularly strong on spelling. The other day he made out a shipping bill for "fourty" barrels of flour. When his employer called his attention to the peculiar spelling of the word forty, he said:

"Oh, yes! How very careless of me! I left out the gh."—Exchange.

"Describe the hippopotamus," said the teacher. "The hippopotamus," answered the little girl, "is a very beautiful animal, but is not useful. It is raised only in circuses."—Chicago Tribune.

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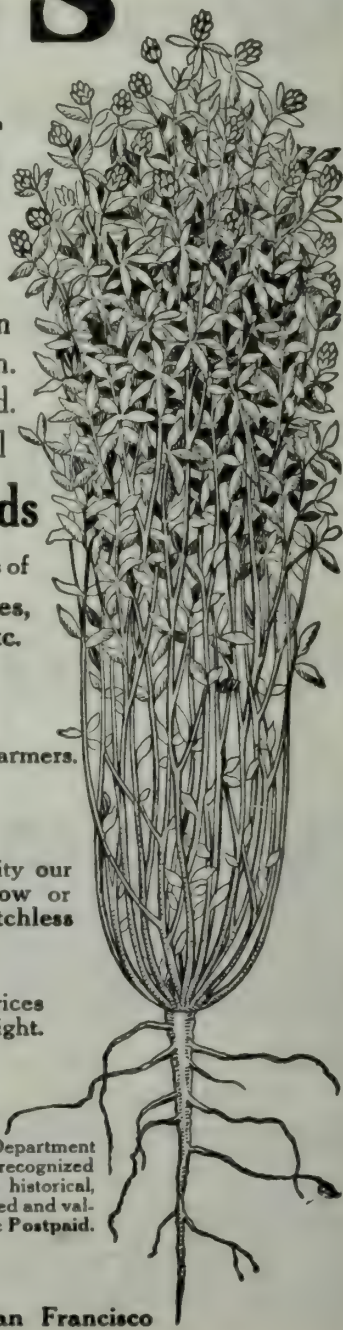
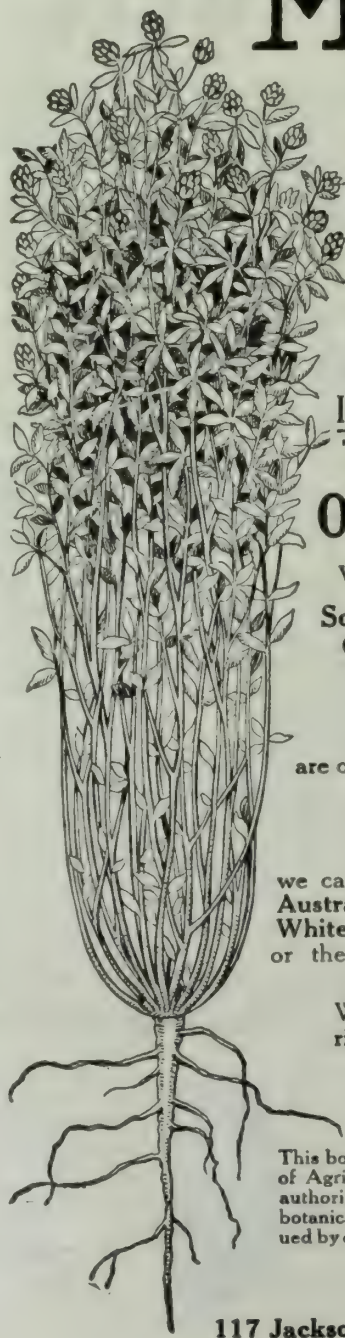
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This book is written by F. D. Coburn, Secretary Kansas Department of Agriculture, who is acknowledged to be the greatest recognized authority on this subject. Is well illustrated. It contains historical, botanical and practical information which will be appreciated and valued by every farmer who is interested in alfalfa. Price 55c Postpaid.

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Our Young Folks

The Magic Apple.

"Such a rainy day!" said little Amy, dolefully. "I wish that I knew something new to do."

"When I was a little girl," said her mamma, "I used to think it great fun to make a magic apple and surprise my papa. How would you like to make one for your papa?"

Amy was delighted with the idea, and brought a large, fair apple. Her mamma gave her a long needle and strong thread, and showed her how to take a long stitch in the apple close under the skin. Amy drew the thread, leaving about two inches hanging out of the apple. Then she put the needle into the very hole that it came out of, and took another long stitch, and so on all around the apple, at the end bringing the needle and thread out of the very first hole. Then she took hold of both ends of the thread and pulled hard, but carefully; and all the thread came out of the first hole. Amy rubbed the apple, which was a fine red one, until it shone like glass. The needle-holes did not show.

When her papa came home, Amy

gave him the apple; and he sat down by the fire to eat it. He began to peel it with his sharp knife. Oh, how surprised he looked when the apple suddenly fell in two when he had it a little more than half peeled!

Amy was pleased and surprised, too, for she had not realized that she had cut the apple in two under the skin when she pulled the thread out; but she had.

Any child, with a little care, can make a magic apple just as Amy did, and surprise somebody very much.—Selected.

The Great Elm.

Of all the trees that Billy knew, the very tallest was the great elm in the meadow-lot near the river. He heard that the spire of the new church at the village was more than a hundred feet tall, and he felt sure that his tree was taller than that.

One day Billy and his cousin Robert were playing in the meadow. They sat down to rest for a minute in the shade of the great elm.

"I wish I could really find out how tall this tree really is," said Billy.

"Why, that is easy enough," said Robert.

They ran up to the barn, where Robert picked out a small pole from a pile of lumber. With a foot rule, which Billy brought from the house, they found that the pole measured almost exactly ten feet in length. Taking both the pole and the foot rule, they hurried back to the meadow. "Now you sit down and watch me," said Robert.

He stuck the pole into the ground, not far from the elm, but outside the place where its great shadow fell. Then he carefully measured the shadow that was cast by the pole, and with equal care measured the distance from the base of the tree to the end of the shadow cast by its topmost branches.

"Your elm is one hundred and twenty-eight feet tall," he said a moment later.

"How did you do it?" cried Billy. "There could be nothing easier," said his cousin. "The pole is ten feet tall, and I found that its shadow is just five feet in length. Now that means that it takes two feet of the pole, with the sun where it is now, to cast a foot of shadow. Of course it is the same with the tree. I found that the length of the tree's shadow is sixty-four feet. This means that the tree itself is twice sixty-four feet, or one hundred and twenty-eight feet high. Do you see? That is the way our teacher had us find out the height of our flagpole."

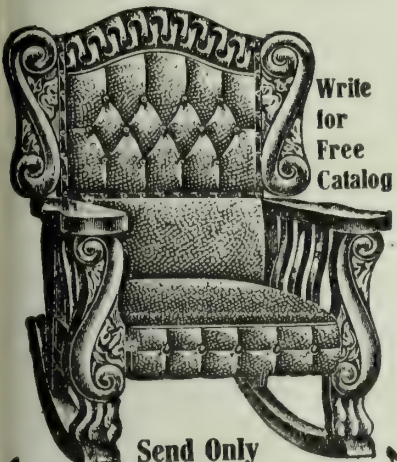
Billy was quick enough to understand, and before another day had passed he had measured the height of a score of trees in the meadow and near the house.—Virginia Bowdoin, in the Youth's Companion.

It was a geography lesson, and the teacher had been asking what some of the different states were noted for. Looking at one of the little girls, she asked:

"Tell me, Florence, what Rhode Isl- and is celebrated for."

For a moment the child was silent, then an inspiration apparently came to her.

"Rhode Island," replied the little girl, "is celebrated for being the only one of the United States that is the smallest."—Harper's Magazine.



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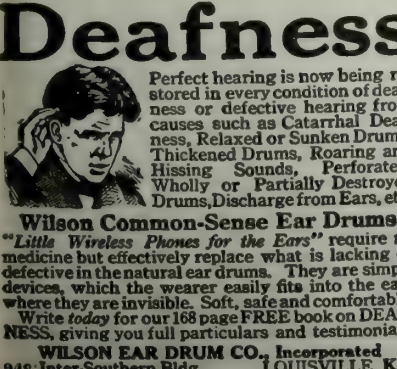
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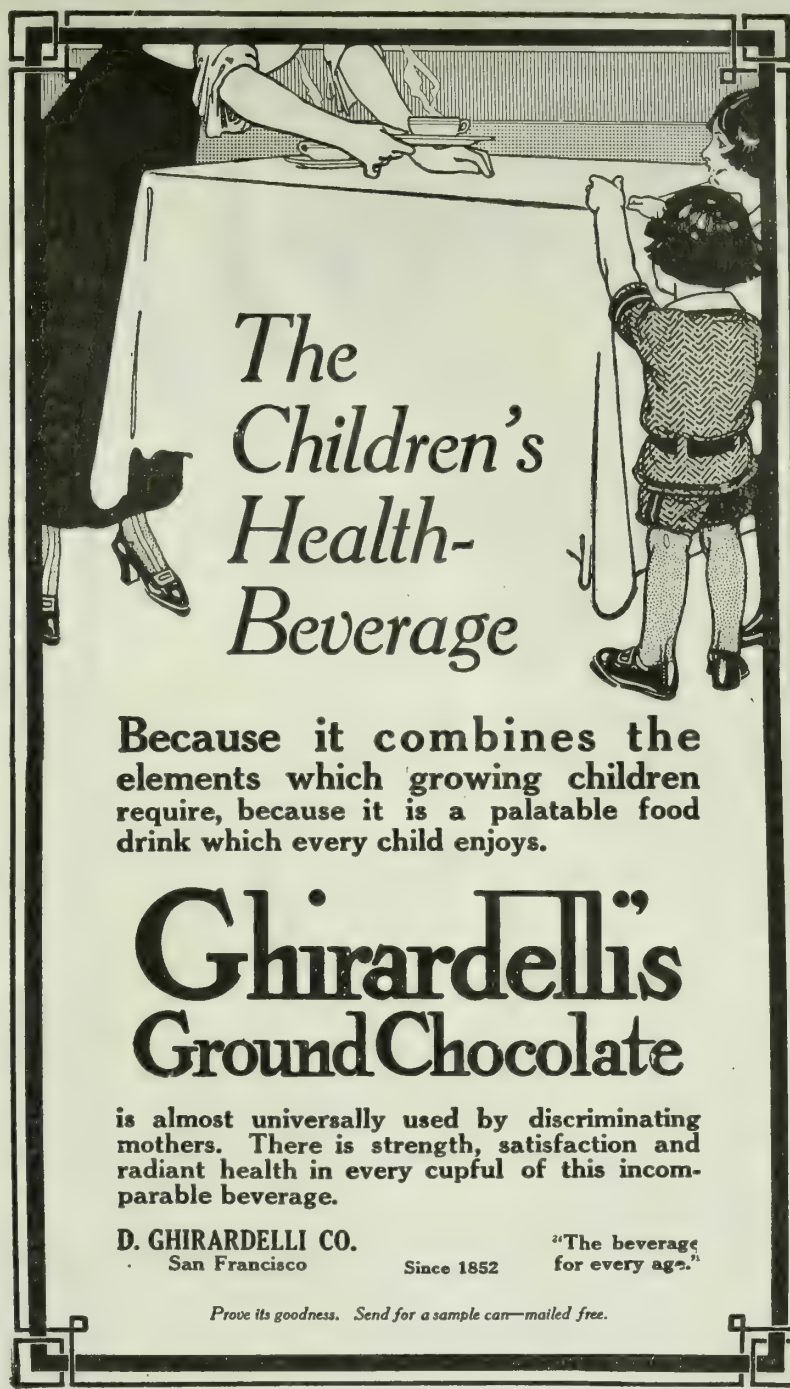
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L. LASCELLE, Mgr., 120 1/2 So. B'way, Dept. P Los Angeles, Cal.

All the different systems of brooding were discussed at a recent meeting of the Santa Clara Valley Poultry Association last week.

THE MARKETS

San Francisco, Mar. 18, 1914.

Cereals.

WHEAT.

This market continues to draw on outside stocks, and continued firmness in Eastern and Northern markets has brought a slight advance on all grades, the new prices being firmly held. About 9000 tons of wheat was destroyed last week by a dock fire at Portland.

California Club, cttl...	\$1.62½ @ 1.65
Forty-fold	1.65 @ 1.67½
Northern Club	1.62½ @ 1.65
Northern Bluestem ...	1.75 @ 1.77½
Northern Red	1.62½ @ 1.70

BAPLEY.

The upward movement of barley which started a couple of weeks ago has not yet been checked, and quite a sharp advance is noted this week, choice feed being held as high as \$1.20. There is a very fair demand, and spot supplies are coming out slowly.

Brewing and Shipping..	Nominal
Choice Feed, per cttl...	\$1.17½ @ 1.20
Common Feed	1.12½ @ 1.15

OATS.

The only change noted this week is a slight decline in white oats, which have received little attention for some time. While offerings here are limited, there is not much demand for any grade at present.

Red Feed	\$1.50 @ 1.60
Seed	2.00 @ 2.10
Gray	Nominal
White	1.25 @ 1.30
Black Seed	Nominal

CORN.

All descriptions are held steadily at the old prices in the local trade. There is only the usual light demand, with no heavy offerings.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @ 1.82½
Eastern White	Nominal
Egyptian	1.75 @ 1.85
Milo Maize	1.75 @ 1.80

RYE.

Trading in this grain is very quiet, with light supplies and no large demand, and prices are unchanged.

Rye, per cttl.....	\$1.45 @ 1.50
--------------------	---------------

BEANS.

The bean market is still stiffening up, as the movement continues rather active, and supplies in all lines are getting into small compass for this time of year. Consuming markets generally are well cleaned up, and inquiries which were withheld for some time are now coming out rapidly from all directions. Pinks, which have been unchanged for some time, are quoted higher this week, as this variety has received considerable attention. In sympathy with the marked firmness in both primary and Eastern markets, the local figures for limas have also been advanced. The Eastern price for this description has gone up sharply, spot supplies being scarce. It is said that the lima acreage will be greatly increased this year.

(On wharf.)

Bayos, per cttl.....	\$5.40 @ 5.65
Blackeyes	4.65 @ 4.75
Cranberry Beans	4.25 @ 4.50
Horse Beans	1.90 @ 2.15
Small Whites	5.00 @ 5.25
Large Whites	3.60 @ 3.75
Limas	5.40 @ 5.60
Pea	3.20 @ 3.40
Pink	3.40 @ 3.75
Red Kidneys	5.40 @ 5.60
Mexican Red	4.50 @ 4.80

SEEDS.

Everything in this line is quiet at present, and prices are steadily held as for some time past.

Alfalfa	12½ @ 15 c
Broomcorn seed, per ton..	Nominal
Brown Mustard, per lb....	3½ c
Canary	7 @ 7½ c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾ c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Values are firmly maintained, and with the continued advance in wheat a further advance is considered pos-

sible, although milling interests appear to be pretty well supplied with grain for current needs.

Cal. Family Extras ...	\$5.80 @ 6.20
Bakers' Extras	4.80 @ 5.40
Superfine	3.90 @ 4.20

Hay and Feedstuffs.

HAY.

Arrivals of hay have been a little larger for the last week, and the market remains very weak, though it appears that most of the arrivals are brought in by dealers. The consuming demand, however, is said to be very light, and it is impossible to effect sales at satisfactory prices. Consumers refuse to buy except for immediate needs, as they count on the present heavy supplies in the country, together with the prospects for a heavy crop, to bring prices still lower, or at least to prevent any advance. Dealers are buying little at present, having made their purchases some time ago, and there is little demand through the country. Alfalfa is generally neglected.

No. 1 Wheat, or Wheat and Oats	\$13.50 @ 14.50
do No. 2	11.00 @ 13.00
Lower grades	9.00 @ 11.00
Tame Oats	10.00 @ 13.00
Wild Oats	9.00 @ 11.50
Alfalfa	8.00 @ 11.00
Stock Hay	7.00 @ 9.00
Straw, per bale.....	65 @ 90c

FEEDSTUFFS.

Offerings of bran in the local market have decreased somewhat of late, and prices accordingly show a slight advance. Rolled barley is also higher, corresponding to the advance in the whole grain, and this class of feed is in fair demand, though in general the market is quiet.

Alfalfa Meal, per ton....	\$18.00 @ 19.00
Bran, per ton	24.50 @ 25.50
Oilcake Meal	34.00 @ 35.00
Cocoanut Cake or Meal..	27.00 @ 28.00
Cracked Corn	41.00 @ 42.00
Middlings	33.00 @ 34.00
Rollod Barley	25.00 @ 26.00
Rollod Oats	29.50 @ 30.50
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

The week of unusually warm weather has had considerable effect on the local vegetable market, causing a general tendency to lower prices, both on account of more abundant supplies and the poor condition of some offerings due to the heat. The week opened with much larger offerings of asparagus than have been received before, and offerings will increase still further if the warm weather continues. The canneries are getting into the market, but so far local requirements have about kept pace with the supply. Peas are offered more freely, but prices on attractive lots are pretty well maintained. Celery is much cheaper, as supplies are large and of rather poor appearance, and rhubarb is easy. Lettuce also is much lower, with heavy arrivals from the south. Mexican tomatoes are again coming in and are easy in price, while bell peppers are lower.

Cabbage, per cttl.....	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.....	4 @ 8c
Carrots, per sack	40 @ 50c
Green Peas, lb.....	4 @ 7c
Tomatoes, Mexican, box..	2.00 @ 2.50
Sprouts, lb.	4 @ 6c
Celery, large, crate.....	1.50 @ 2.25
Rhubarb, box	1.00 @ 1.75
Lettuce, crate	75c @ 1.50
Mushrooms, lb.	5 @ 10c
Asparagus, box	75c @ 1.25

POTATOES, ONIONS, ETC.

Potatoes are unchanged, as supplies in Oregon appear to be ample, though both California and Arizona are calling on that market for supplies. The Australian onions are about cleaned up, and Bermudas are now coming in, while Oregon stock is a little stronger. New potatoes are lower.

Potatoes:	
River Whites	75c @ \$1.05
Sweet Potatoes, per cttl...	1.25 @ 1.60
Oregon Burbanks	85c @ 1.25
Onions: Oregon	3.00 @ 3.50
* Bermuda, crate	2.00 @ 2.50
Garlic, per lb.....	7 @ 12c
New Potatoes, lb.....	1½ @ 3c

Dairy Produce.

POULTRY.

Both local and Eastern supplies are coming in more freely this week, and while there is quite an active demand, preventing any large accumulation, prices for fryers and hens are a little lower.

Large Broilers	25 @ 30 c
Small Broilers, per lb...	30 @ 35 c
Fryers, per lb.....	24 @ 26 c
Hens, extra, per lb.....	19 @ 20 c
Hens, large, per lb.....	19 @ 20 c
Small Hens, per lb.....	20 @ 21 c
Young Roosters, per lb...	20 @ 21 c
Squabs, per doz.....	\$2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @ 21 c
do dressed, choice....	23 @ 25 c

BUTTER.

Prices show a drop of about a cent for the week, as supplies are coming in quite freely, and while there is a good demand locally, there is not enough outside business to keep supplies from accumulating.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23	23	22½	22½	22	22
Prime						
Firsts	22½	22½	22	22	21½	21½
Firsts	22½	22½	22	22	21½	21½

EGGS.

Extras and pullets remain exactly as last quoted, while firsts are a cent lower. Supplies are very large, and prices are only maintained by a large movement to Los Angeles and heavy buying by storage operators, who are taking on supplies in spite of the rather large offerings of Chinese storage stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	21	21	21	21	21	21
Firsts	19½	19½	19½	19	19	18½
Selected						
Pullets.....	19	18½	19	19	19	19

CHEESE.

Offerings of flats and Y. A.'s have been very moderate, and the former have been marked up a little. Monterey cheese is being offered in excessive quantities, and shows another drop, with further declines in prospect.

Fancy California Flats, per lb...	16½ c
New Young Americas, fancy....	19 c
Monterey Cheese	14 @ 15 c

Deciduous Fruits.

After a long period in which apples have been the only offering in this line, strawberries are again in the market, several small shipments having come from both Watsonville and southern California. The southern stock so far has not been very attractive, and 20c per basket is the top price, while the Watsonville offerings are sold readily around \$1.25 per drawer. There is nothing new in apples, which are moving slowly, with light supplies.

Strawberries, drawer.....	\$1.25 @ 1.50
Apples: Newtown Pippins..	1.50 @ 2.00
Hoover	1.00 @ 1.50
Oregon Spitzenbergs ..	1.40 @ 2.25
Oregon Ben Davis.....	1.65 @ 1.85

Dried Fruits.

The continued increase in demand, combined with stiffening of prices in consuming markets and the scarcity of offerings on the Coast, has brought a sharp advance for country offerings in several lines. Evaporated apples and apricots have been marked up, but there is so little left in the country that the present figures have brought out little additional stock.

Prunes show a sharp advance, as the packers are nearly out of stock, distributing markets now appear to be pretty closely cleaned out, and the trade is anxious to provide for requirements between now and the time when the new crop will be available. These prices are bringing out some stock, but prunes are scarce everywhere, and everything is closely held. Peaches show only a slight advance, but the outlook for this fruit should be good, owing to the scarcity in other lines. Pears are also higher, but there is hardly anything to be had from the country. In raisins, the movement is keeping up well, and the seedless varieties are higher. Old figs are cleaned up, and it is reported that about two-thirds of the Fresno new crop has been contracted at 3½ to 4c. Peach contracts also are reported at 4½c, with contracts for apricots at 8 to 8½c. It is too early, however, for any heavy movement of future dried fruits. The New York Journal of Commerce says: "Very few packers are in a position to fill orders for 1913 prunes for shipment from the Coast in assortments covering the sizes most wanted by the Eastern trade. None of the sellers is disposed to do business in 40s to 60s on less than a 7½c f.o.b. four-size bulk basis, especially on 50s and 60s, as these sizes are especially scarce and seem to be most wanted by the Eastern trade. There is less activity in the spot market, the recent rapid advance in prices having put a check upon the demand. Holders, however, are firm in their views, as they are getting many inquiries from interior markets."

"Because of the lack of offerings from Coast shippers and the limited and controlled supply of spot goods here, interest in future California prunes has developed, and though only a few cars have so far been sold, the market for the 1914 crop seems to be already established on a firm basis. Sales of several cars are reported to have been made, to come to this market on a 4½c f.o.b. four-size bulk basis for September shipment and at 4½c for first half of October. Few packers seem disposed to book orders for September and not many are willing to contract for the first half of October."

"The situation in apricots is strong. Very few goods are left in second hands out of last season's crop, and the supply with packers seems to be exhausted. Spot prices are strong and tending higher under a steady though moderate consuming demand. Some business for August-September shipment to New York out of the 1914 crop is reported to have been done on the basis of 8c for standards on 50-pound boxes unfaced, 10c for choice, 10½c for extra choice, and 11½c for fancy, f.o.b. Coast."

"Peaches are unchanged so far as the New York market is concerned, the local demand for spot and forward shipment goods being about normal for the season. With the advent of the spring demand, however, a higher market is looked for in sympathy with advances from the Coast and the more important distributing centers."

"Raisins of all kinds are reported to be closely cleaned up here, and the market is strong if not quotably higher. There are no offerings for shipment from the Coast so far as can be learned outside of those made by the Associated company."

Evap. Apples, 1913	8 @ 9 c
Apricots, 1913	13 @ 15 c
Figs: White	Nominal
Black	Nominal

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Calimyrna	41
Prunes, 4-size basis.....	7 @ 7¼c
Peaches	4 @ 4½c
Pears	9 @ 12 c
Raisins (in sweatbox):	
Loose Muscatels	4
Thompson Seedless	5 @ 5½c
Seedless Sultanahs	4¼ @ 4½c

Citrus Fruits.

The Eastern auctions are a trifle lower on oranges, owing to quantities of poor fruit and heavy shipments. However, considering everything, the markets are holding up well, and with the advent of warmer weather and the consequent push-cart peddler on the city streets, the slowing down of Florida shipments, and cessation of receipts of Porto Rico fruits, it looks as though California growers will be able to market the big rush of navels from now on at fair prices.

On the New York auction Monday, March 16th, 39 cars of navels were sold at prices averaging from \$3.05 down to \$1.50 per box. These prices were about the same as those received at the various other auction points on that day.

Lemons are holding up well, averaging from \$3 to \$4 per box.

On the Los Angeles auction last Monday, navels sold for \$1.05 up to \$1.52 per box, f.o.b. California.

Shipments from California are now going East at the rate of over 200 cars per day, and this number will be continued probably for the next two months.

Arrivals of oranges at San Francisco have dropped off considerably this week, but the demand is not very heavy, and prices on the best offerings have been shaded. Lemons, etc., are in fair demand at the old prices.

Oranges: Navels	\$ 1.00 @ 2.25
Tangerines, crate	75c @ 1.25
Grapefruit, seedless	1.25 @ 2.50
Lemons	1.75 @ 3.50
Limes	5.50 @ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing new in this line, as practically everything is cleaned up, and while the almonds appear to be in fine shape it is too early to size up the new crop very well.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Values are pretty steadily held, but are not much more than nominal, as most of the old offerings have been absorbed and there is little immediate demand.

Comb, white	15 @ 16 c
Amber	11 @ 12 c
Dark	9 @ 10 c
Extracted: White	8 @ 9 c
Amber	6½ @ 7 c
Off Grades	5 @ 6 c

BEE SWAX.

There has been somewhat more demand for shipment of late, and prices are steadily held, with little offered in this market.

Light	30 @ 31 c
Dark	28 @ 29 c

HOPS.

There is still some contracting for the coming crop, most of the business reported being around 14c. Little spot business is reported here, the old crop being pretty well cleaned up, though sales are reported in Oregon at 18c, with some improvement in demand.

1913 crop	15 @ 17 c
1914 crop	14 @ 16 c

Live Stock.

Large shipments of cattle are still coming in to the California ranches from Mexico and the Southwest, and supplies of beef stock in the local markets are keeping up well, though light and medium calves are higher. Yearling lambs are a little easier, and milk lambs show a sharp decline, although dressed suckling lambs have

POMONA

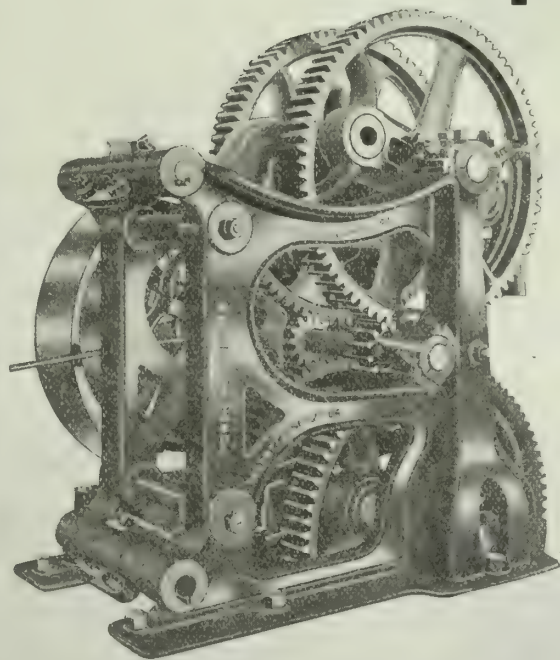
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advanced. The demand for hogs has eased up a little, and heavy stock is slightly lower.

steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼ @ 6½c
No. 2	5¼ @ 6 c
Wills and Stags	2½ @ 5 c
Calves: Light	8½ @ 9 c
Medium	8 @ 8½c
Heavy	6½ @ 7½c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs.	8¾ @ 9 c
100 to 150 lbs.	8½ @ 8¾c
Prime Wethers	5½ @ 5¾c
Ewes	4½ @ 5 c
Yearling Lambs	6¼ @ 6¾c
Milk Lambs	7 @ 7½c

DRESSED MEATS.

steers	12 @ 12½c
Heifers	11½ @ 12 c
Veal, large	12 @ 13 c
Small	13½ @ 14½c
Mutton: Wethers	11 @ 11½c
Ewes	10 @ 10½c

Suckling Lambs	15 @ 16 c
Dressed Hogs	13½ @ 14 c

WOOL.

It is reported that buyers are taking considerable interest in the spring wool, and that efforts are being made to close contracts in advance, but growers are disposed to hold off until the clip is in, hoping for an improvement in prices. Nothing new has developed as to prices in the San Joaquin, and no notable values have been established for the northern clips.

Spring clip:	
San Joaquin	10 @ 13 c
Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @ 10 c

HIDES.

The market continues very quiet, with prices unchanged. There is a fair demand, but desirable offerings continue very light.

HORSES.

Dealers and speculators have been considerably in evidence among the buyers in the local market of late, evidently anticipating a better demand in the near future, though a fair amount of business has been done with regular buyers both for country and city use. Values are keeping pretty well up to the range quoted, though the top figures have seldom been realized of late.

Heavy drafters, 1700 lbs. and over	\$275 @ 325
Light Drafters, 1500 to 1650	225 @ 250
Chunks, 1350 to 1500	200 @ 225
Wagon Horses, 1250 to 1350	150 @ 200
Delivery Horses, 1050 to 1250	100 @ 125
Desirable Farm Mares	75 @ 100

MULES.

1200 lbs.	\$200 @ 250
1100 lbs.	150 @ 200
1000 lbs.	125 @ 175
900 lbs.	75 @ 125

Irrigators Discuss Large Problems.

[Written for the PACIFIC RURAL PRESS
by A. L. COWELL.]

Thorough discussion of a constitutional amendment to allow the state to issue bonds for the purchase of irrigation district bonds, consideration of the plans and purposes of the recently organized Inland Waterways Association, analysis of the bill providing for a State Water Commission,

and endorsement of the Newlands River Regulation bill in its amended form, were the features of the joint meeting of the San Joaquin Valley Water Problem Association and the Irrigation Districts Association of California at Bakersfield February 23.

STATE FINANCIAL AID.—Action regarding the proposed constitutional amendment was left to a committee

which will decide whether an effort shall be made to secure signatures to an initiative petition for that purpose.

R. L. Hargrove traced the causes of difficulty in selling irrigation district bonds, showed that irrigation development on an extensive scale is practically sure to be under the district plan, with public ownership and control of water, and that therefore it is of the utmost importance that the financing of these enterprises be on a safe basis and at reasonable rates of interest.

W. R. Williams, State Superintendent of Banks, declared that it is entirely logical for the state to aid in the financing of irrigation districts, as the districts are merely carrying out a function of the state in providing a great public necessity for the development of the soil. He called attention to the fact that the last legislature had submitted a constitutional amendment, which would be voted on next fall, to authorize the state to supervise the affairs of irrigation districts and prevent the issuance of bonds for unworthy projects and to enforce more effectively the obligations incurred by such districts. Thus the state would have the power to protect itself in case it should buy bonds of the districts. And by selling state bonds bearing 4 or 4½% interest and investing the proceeds in safeguarded irrigation district bonds bearing higher interest, the state would derive a revenue, in addition to paying all expenses of investigation and supervision.

Frank Adams, of the Bureau of Irrigation Investigations of the U. S. Department of Agriculture, approved the plan and told of the growing sentiment in other western states that the irrigation districts should not be expected to work alone.

The general interest in irrigation and the need of some plan to meet the demand for productive land on account of the influx of immigrants after the completion of the Panama canal seem to justify prompt action. The suggested amendment would also provide a practical form of rural credit when the farmer, providing water for his land, is in greatest need of cheap money.

The work of the Inland Waterways Association was presented and the Water Problem Association voted to take out three memberships in this new organization, naming John Fairweather, A. L. Cowell, and E. S. Ellis as its representatives.

STATE CONTROL OF WATER DISTRIBUTION.—Former Governor Pardee spoke also on the water commission bill, which has been referred to the people for their judgment at the next general election. Both associations had formerly endorsed the measure. Its chief purposes are to provide for an authoritative determination of the available water to authorize its appropriation in such a manner as to protect the people from monopoly, to give title to a definite quantity of water, and to provide a practicable method of determining the relative rights to the use of the water of a stream with due regard to all interests, including those of the public.

GOVERNMENT APPROPRIATIONS FOR RIVERS.—An agreement between Senator Newlands of Nevada and the representatives of interests on the Lower Mississippi river has been made whereby there is a prospect that the Newlands River Regulation bill with certain amendments may be passed at

this session of Congress. It provides for an appropriation of \$60,000,000 annually for ten years for work on the waterways of the country, with the provision that \$5,000,000 annually shall be spent on the Colorado river, \$5,000,000,000 annually on the Sacramento and San Joaquin river systems and the same amount on the Columbia river system. The chief amendments provide for a River Regulation Commission of seven instead of five, for co-operation with state and local authorities on such terms as the commission may determine, instead of on a basis of sharing equally in the expense, and for the construction of all work on the Lower Mississippi river by the national government.

SACRAMENTO-SAN JOAQUIN CANAL.—Construction of a great canal to bring water from the Sacramento valley to the southern part of the San Joaquin valley and the organization of a district consisting of the Sacramento and San Joaquin valleys were proposed to be governed by the state engineer and the various county engineers, to deal in a comprehensive manner with the entire water problem of the two valleys.

At a separate meeting of the Irrigation Districts Association, Peter Schulp of the Alta irrigation district was elected president; T. A. Owen of the Turlock district, vice-president, and E. N. Pierce of the South San Joaquin district, secretary. This association meets quarterly.

The next meeting of the Water Problem Association will be held in Stockton Monday, September 7, the day before the meeting of the Inland Waterways Association in that city.

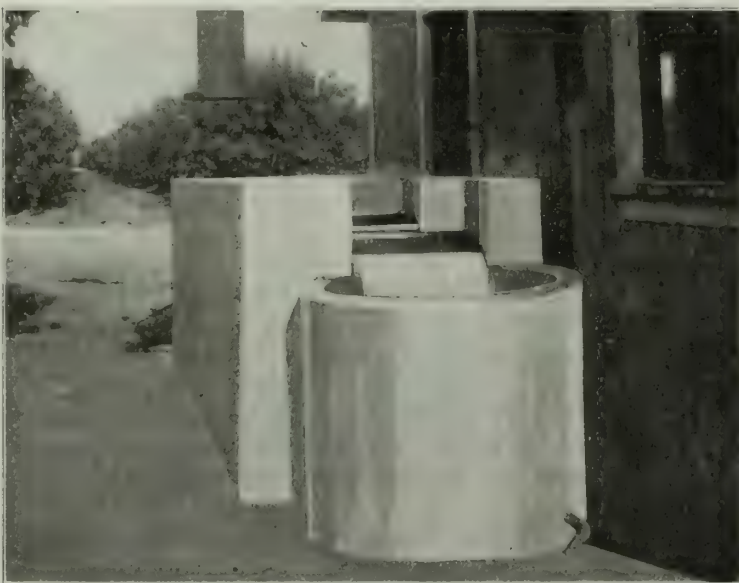
During their stay in Bakersfield the delegates were guests of the civic bodies at a luncheon and on an automobile ride to the Kern river oil fields and to the Edison citrus groves, where deep-well pumps, operated by electricity, provide water for irrigation.

[Another movement in the large is the combination March 12, of seven irrigation districts using water from Kings River. The object is to secure legislation that will favor united action in building mountain reservoirs to hold the flood waters of Kings River. Such a project would make much easier the reclamation of the Tulare Lake basin by reducing the water now flowing into it at flood seasons.—EDITOR.]

A 44-pound bronze turkey, five feet tall, with his head up, at a little over a year of age, was raised last year in Tulare county.

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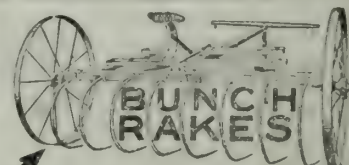
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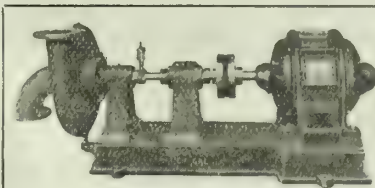
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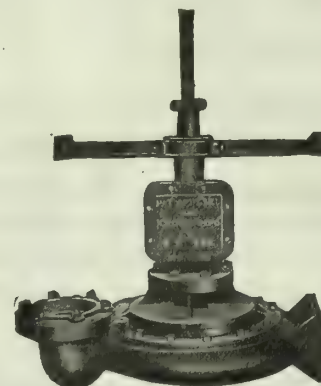
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Saves Water, Land and Labor

A conservative engineer has gone on record in asserting that of the millions of dollars annually expended by irrigation districts for water and for applying it to cultivated crops, fully 70 per cent is wasted.

Experience has demonstrated beyond question that

Earth Ditches are costly and wasteful.

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All three waste Water, Time, Land and Labor.

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CHIEF OF STATE

Forty-Fourth Year.

Since it costs about \$2.25 to produce and market the average box of California oranges, and \$2.82 per box of lemons, and since the average prices have in the past 34 years gone below that, a dozen times on oranges and two dozen times on lemons, according to statistics gathered by Victor Newlan of the University for his graduating thesis; since the average price has often been below the present cost of produc-



Original Washington Navel Trees as They Grew on the Tibbetts' Place in Riverside.



Partial View of Riverside Citrus District—Indicating Multiplication of Original Navel Trees.

All this might be taken to heart by nurserymen's organizations

(Continued on Page 390.)

Pacific Rural Press

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E. J. WICKSON, Editor
FRANK H. WICKSON, Manager
W. H. WICKSON, Assistant Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau at San Francisco, for the week ending at 5 p. m., Mar 21 1914.

Stations.	Rainfall Data.		Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Max. Min. to Date.
Eureka.....	.00	28.81	37.12	78 44
Red Bluff.....	.00	29.67	26.53	83 48
Sacramento.....	.00	18.05	16.33	82 44
S. Francisco.....	.00	26.88	18.94	86 50
San Jose.....	.00	17.48	11.09	86 42
Fresno.....	.01	9.97	7.94	82 44
Independence.....	.00	11.44	7.78	78 36
San Luis Obispo.....	.00	20.00	17.23	92 46
Los Angeles.....	.00	21.08	13.39	86 54
San Diego.....	.00	8.54	8.54	74 49

The Week.

A hot spell followed our tearful issue of last week and emphasized our dripping appeal to the prophets to come through with some of the rain they had predicted. A hot spell always makes the need of rain more apparent, not only through great losses by evaporation from the soil, which are usually manifested much later, but through the direct effects upon young growths which cannot get sap quickly enough to compensate for transpiration. Heat falling upon abundant surface moisture does, sometimes, work ills to the plant, but they are of quite a different character from those wrought by heat upon plants standing in a surface soil of too scant moisture. Usually these are only temporary, as in the case of grassy slopes which, mixed yellow with their green, while the heat was on, but have already resumed full verdure through the fog which has since catinued them and reduced transpiration to normal measures. This we have particularly noticed on the coast hillsides, of course, for there the change in temperature and atmospheric humidity has been most rapid and widest. All these things are related to the plea for regular and adequate moisture for growing plants which we tried to make last week in the argument for the beneficence and intelligence of irrigation as an agricultural method. Surely the ideal condition, to be attained perhaps in the agriculture of the future, will be to have water ready for use when condition of soil and plant show the need of it. It is not a matter of the calendar. It is too often that way now. Crops are risked because the "irrigating season" has not come, and the system stands dry because some dam has not been put in, or some ditches have not been cleaned or repaired, and no water is available because it is not the first of June or some other date. Irrigation by the calendar is like going to church because it is Sunday. Being always available is, of

course, the great advantage of the home supply and the pump over the "system," which is so often dry when it ought to be wet, and the grower is forced to risk his crop because all his knowledge of the needs of the plant, and the lack of the only surety of the season, make him almost desperate.

The Penalties of Irregular Moisture.

Although we have no intention to preach on irrigation this week, our readers are reporting so many puzzling appearances in their plants and trees that we are forced to advise them that most of their problems are based upon irregular soil moisture and the relations of temperatures thereto. Trees both small and large are dying here and there, either because the particular places they occupied were dried out last summer or were water-soaked this winter, or because of both conditions, at different times, in the same place. There is no help for such trees if they are hard hit, but if they have life enough to re-establish themselves, they are more apt to do it if the soil is reasonably moist, now, while the effort is being made. Just a little moisture added to the surface soil will help a lot: even though it was too much water which hurt them, too little moisture will check recovery. Perhaps, we will get a shower? Oh, yes, perhaps. With underdrainage to prevent excess and with irrigation to insure enough, is just as good a precept pomologically as Lincoln's "with malice toward none and with charity for all" is humanly. Both keep things exactly right, while either alone might be ineffective.

There is some complaint of apricots killed with their jackets on, and the crops in some interior places will be reduced thereby. There is always danger of it when temperatures and moisture are very irregular. The apricots bloomed in the rain in many places. Our own trees near the bay were drenched so that we apprehended no pollination, but some varieties set very full, although we did not hear the hum of a bee for days, and they are now on so tight that much thinning will have to be done. But we had cool weather after the rains until the jackets disappeared. At other points there came high heat upon little fruits, sweltering in their tightly drawn jumpers, and our observation is that readers are right who ask if this did not sever their attachments. Professor Smith, of the University, has demonstrated that several fungi are active under just those conditions, and that Bordeaux mixture just as the fruit is setting will help to hold it on the tree.

An Eight-Hour Farm Day.

Oh, how our grandfathers would laugh at us if they should know that Californians are forced to seriously consider an eight-hour day for farm labor. To our grandfathers such a proposition would have seemed so unreasonable that nothing but a scornful laugh would answer it; but now, although it is just as unreasonable as ever, it must be seriously reckoned with because there has arisen in the public mind the conception that a man who works for another does him a great favor instead of receiving a favor from him, as our grandfathers held employment to be. And so the man who has intelligence, nerve and enterprise to organize and conduct a concern which gives employment has come to be looked upon as a receiver and not as a dispenser of bene-

fit. It is so strange that the world has left this so long undiscovered: it surely is something new under the sun. It is not our business to care particularly how this new thing works in the great, wide world: other people are looking after that. When, however, the new idea and its attendant modifications of behavior, come into view on the agricultural horizon, our attention must be given to them. For this reason we note with satisfaction that the California Cured Fruit Exchange has inaugurated a campaign against an initiative proposition by which its advocates expect to attain, through the next legislature perhaps, provision for the punishment of anyone who allows his laborers to work more than eight hours a day on his farm. The following is the proposition which Californians will be called upon to vote next November:

"Any employer who shall require or permit, or who shall suffer or permit any overseer, superintendent, foreman, or other agent of such employer, to require or permit any person in his employ to work more than eight hours in one day, or more than forty-eight hours in one week, except in case of extraordinary emergency caused by fire, flood, or danger to life or property, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than \$50.00 nor more than \$500.00, or imprisoned not less than 10 nor more than 90 days, or both so fined and imprisoned."

Why Hour-Limit Is Tyranny in Farming.

The California Cured Fruit Exchange is summoning all kindred associations of employers of farm labor to join it in opposition to such an enactment, and we trust its appeal will arouse popular attention to the evils of it as applied to farm management and the handling of farm products. The proposition should receive the energetic opposition of those who, hedged about by all the risks and difficulties of making farm products, have now the menace of being criminalized and penalized whenever they do put forth the strenuous effort to make and protect farm products which their intelligence and experience demonstrate to be indispensable thereto. The labor element in farming is difficult enough to handle, for half a dozen reasons, and here comes a prohibition against a farmer's using even the best labor he can train to the service, in the only way it can reasonably be used; that is, as the nature of the opportunity permits. It is an arbitrary, unreasonable, tyrannical—yes, so far as we can see, an impossible proposition in farming. It stultifies all that farmers are striving for in the effort to produce food more abundantly and at less cost. It is axiomatically absurd; we are not sure that argument can make more clear the folly of it, and yet the Cured Fruit Exchange cites reasons why the public should consider it unwise and vote against it. We summarize them: enforced idleness will not improve either the social or economic standing of farm laborers; the best use of land cannot be served by expedients and principles prevailing in other industries; restriction on producers will increase cost of food to all consumers; to enact such a law in California would handicap the Californian in all his competitions with other states and countries where such regulations do not exist; limiting hours of labor would either reduce wages below proper support of the laborer or would end the business because

his employer could not pursue it; limiting hours would endanger all perishable products which are even now secured by great effort and at small margins of profit; such legislation is in many ways at enmity with public welfare. There are many more and possibly even stronger reasons than the Association has cited. It is a question which every farmer should consider from the point of view of his own conditions and environment and one which all farmers' associations should vigorously act upon.

Uncle Sam Provides for Direct Trade.

The middleman surely gets it in the neck this time. We are informed by telegram from Washington that the postmaster at San Francisco has been directed to "receive the names of persons who are willing to supply farm products in retail quantities by parcel post." Printed lists of these names, showing kind and quantity of commodity available, will be distributed among city patrons. "By the use of the lists," First Assistant Postmaster-General Roper says, "the city consumer will be able to get in touch with a farmer who will fill his weekly orders for butter and eggs and other farm produce. The consumer will receive the produce fresh from the country, and the personal relationship established will no doubt tend to improve the quality. The farmer will be relieved of carrying his produce to market, as the rural carrier will make daily collections at the farmer's door of those retail shipments to city consumers."

This is ideally direct, but how does the farmer know that the city receiver will ever pay for the stuff? Does the carrier C. O. D., or will the U. S. sub-treasurer send a draft? And who fixes the price? We also seem to need a law forbidding a farmer to work more than eight hours a day in his mail order annex. It will be very interesting to see what will work out of this.

The Citrus Outlook.

We are giving much attention to citrus fruits this week, because, as our line of greatest value in fruit products, it merits the attention not only of those in the business, but of all who desire to know why California is great. Upon another page there is an interesting tabular statement by the Citrus Protective League, showing just how large our California citrus industry is and how it has grown during a long term of years. There naturally arise questions as to its dangers in the future, as the recent rate of planting has been very great. There is the menace of frost, the very bottom of which we probably sounded last year, and yet this year's product will be among the greatest of the last decade. So far as frost injuries go, then, with the immediate recovery from the hardest knock we ever had and the constant progress in orchard heating, we count them merely as temporary discomforts but no serious malady. Much more is said of the likelihood of overproduction, but of that we have no fear at all. We shall have occasional lack of distribution and occasional low prices, such as affect every product a man ever grew, but we cannot see any possibility of producing more of the best California styles of oranges than the vast territory, to which our production is tributary, will eagerly demand. Do you ever stop to think how relatively small in area is the whole citrus territory of the United States, how large the consuming area is, and how

great the present development from our latitude clear to the Arctic. Think of how great a joy an orange is to millions who will never see a tree on which an orange grows. See the California orange in the hands of the train boys on the great Canadian railways, the new Alaska railway, the Siberian overland railway, making its glories known and having the inside track over all the oranges of the earth, all the way from Nova Scotia to Nova Zembla, both in quality and in transportation access. So far as we can see, a good commercial orange and lemon from California have command of the northern world on both hemispheres. We do not believe that present planting has reached a respectable fraction of the acreage which coming decades will realize.

Queries and Replies.

Querists must submit full names and addresses.

Curl-Leaf of the Peach.

To the Editor: My young peach leaves have a reddish purple disease which spreads from the center of the upper surface, some of the unfolded leaves being infected inside. What can I do?—W. C. S., Glenn.

Many of our newer subscribers are writing in this way. The trouble is curl-leaf of the peach, which experienced growers understand. It is caused by a fungus, the spores of which go through the winter on the bark and attack the young leaves early in their development. The proper treatment is preventive and consists in thorough spraying with Bordeaux mixture or lime-sulphur just as the buds are swelling and before they open. Bordeaux can also be used after the leaves show injury and some spreading can probably be prevented. Curl-leaf may take off the first break of leaves without seriously injuring the tree; for the later leaves are protected by the higher heat and drier air of the advancing season. Some peaches are practically resistant to curl-leaf; others are very subject to it: the latter should be regularly winter-sprayed to save the crop and the first suit of foliage.

How Much Water to Order.

To the Editor: How much water do I need to order for four acres in all of heavy loam on which there are 400 old peach trees, and the following, planted this year: Oranges, 250; peaches, 100; plums, 108; pears, 86.—Beginner, Lincoln.

You must have set the trees pretty thickly to get about 950 trees on four acres. Ordinarily that many trees would occupy twice that acreage or more. It requires local experience to order water intelligently in any place, and some wide-awake neighbor can advise you much better than we can. Theoretically you might expect to carry that many trees, while they are young, with one miner's inch continuous flow, delivered in multiples, of course, according to the number of days intervening between the runs. The duty of that much water will depend upon the retentiveness of the soil; also upon how well you handle the water and how much you conserve by good cultivation.

Worms on Oaks.

To the Editor: I have a live-oak tree in the yard. Last year it was stripped of leaves by worms. What kind of spray can I use to kill the young worms?—F. G. S., Morganhill.

Spray thoroughly so as to wet all the leaf surfaces with lead arsenate, 2 pounds to 50

gallons of water. You need, of course, a good outfit for spraying high trees, and ladders to work from. Watch the tree and spray when the worms are appearing and before they have time enough to seriously injure the leaves.

Young Peach Leaves Die.

To the Editor: Inclosed you will find a twig taken from a peach tree, Tuscan cling. It seems that quite a few of my peach trees put out a few leaves and then within a few days turned out like the inclosed twig. [Large parts of the leaves turned brown and dry before unfolding.] Some of the trees set out last spring died down completely, although the trees planted two years ago are first showing it now. What is the trouble, and, if any, the remedy?—L. F. P., Sacramento.

There has been too much water standing in the soil this winter. It has destroyed the root-hairs and they could not furnish sap to keep up the growth which started from the sap in the main roots and stems. Cut back the trees, and those not too badly injured will start again later, if the tree is able to re-establish its connection with soil-moisture by the growth of new root-hairs. The prevention for such a condition is under-drainage so that there shall be no water standing in the soil. Your two-year-old trees were not hit before because there was not rainfall enough to fill the soil with standing water.

How Deep to Set Trees.

To the Editor: My land is heavy clay loam on which I am ready to plant peaches, plums, pears and oranges. I expect to have irrigation, and, being a beginner, don't know how deep I should plant my trees. Some say I should plant them three inches higher than the old surface of the ground, because the dirt in the freshly dug holes will sag in time. Some say, plant them on the level of the old surface, and others say, plant them as deep as you can, and deeper than they were in the nursery, expecting this will retain the moisture. I anxiously expect your valuable answer.—M. D. E., Sheridan.

In such a soil as you describe, calculate as well as you can to have the tree stand in the orchard, after the loose dirt settles, just about as it stood in the nursery. If you tramp the earth in setting as you should (unless you are water settling it) the tree will not sink much after that, and to allow three inches for settling is too much unless you have been digging a whale of a hole, as some beginners unnecessarily do. In a heavy soil a tree should stand as it did in the nursery, or a trifle higher—but not too much. In a light sandy soil, plant trees two or three inches or so deeper than they stood in the nursery. As a rule, more trees are, however, planted too low than too high, on medium and heavy soils. Read the observations of Dr. Snowden of Los Angeles on another page.

Roots for the Orange.

To the Editor: Which root do you prefer for the orange: sour-stock or trifoliata?—Planter, Roseville.

*Our observation is that the sour-stock is generally to be preferred and is most largely used. Trifoliata may be better to bring the fruit to a little earlier ripening and the tree to fuller dormancy in places where heavy freezing is to be expected. It is now being largely used in Texas for this reason, but the conditions of Texas do not largely prevail in this State. The University has systematic testing of different stocks now on hand and ere long we may expect notice of comparative results.

Growing Nursery Orange Trees.

[Written for the PACIFIC RURAL PRESS.]

Why is a nursery orange tree so expensive? Take a look at an orange nursery. Seeds are obtained often from across the continent or across the water. They are planted on land most carefully prepared. Allen Dodson of Los Angeles county put 17 hay-rack loads of the rottenest manure he could find on a sandy space 290x60 feet. This had to be worked and reworked to leave no lumps of manure. The sand is necessary to prevent baking. Then he planted 8½ bushels of seed, watered them carefully about every other day and kept the weeds down for six weeks before they came up. They grew about a foot before cold weather came.

But, though this nursery is in the orange country, protection had to be given from frost and sun. Around the seedling bed were set upright 2x4s twenty feet apart with two 1x3 boards between them on which lath were nailed upright about 1½ inches apart. Above these lath is a two-foot open space and then a roof similar to the sides but made in 20-foot squares so it may be easily removed to new ground every year. Mr. Dodson believes that the two-foot space above the side lath should also be similarly enclosed because the low winter sun shines directly onto the seedlings and turns them yellow. The shadows under the lath are perpetually moving with the sun so that direct light never stays long at a time on a given tree.

On alternate years, the lath cover must be moved to another space as Mr. Dodson learned to his sorrow. One year he sold 185,000 trees from a certain plat and tried it again the next year on the same place getting only 4000 salable trees. He had used only a third as much manure the second year, thinking to have some advantage from that applied before.

After a year in the seed bed, the young trees are transplanted to the nursery in the warm spring, keeping weak ones by themselves. Because they are to remain two or three years in the nursery, they are set farther apart than ordinary trees; and because most of them are shipped with the earth around their roots wrapped in a burlap, such should be set 18 inches apart.

Some of them died, but those that live a year in the nursery are ready to be budded when the sap begins to flow next spring.

Each bud for the thousands of trees must be selected and properly cut from a tree of the variety desired, and kept carefully moist until used. Two cuts in the bark of the seedling are required, the budder working on his knees, the bud is slipped under the bark, and tied with a string. A nimble fingered supple backed boy usually does the tying. A few weeks later some one must cut the strings from those that have lived and rebud the others. When the new bud shoots are well started all other branches of the seedling must be cut off and rigidly prevented from starting new shoots or suckers. The main trunk is often left long for a season as a support for the tender bud-shoot to which it is tied. Next winter the tree may be dug up and "balled"; that is, a trench is plowed along one side of the row cutting side roots six or eight inches from the tree, and the rest are similarly cut

with a spade, dirt and roots being then wrapped in burlap and sold—at what seems to the buyer a high price.

BURLAP FROST PROTECTION.

[Written for the PACIFIC RURAL PRESS.]

Allen Dodson of Pasadena has an idea about wrapping orange nursery trees with burlap when cold weather threatens. A year ago last winter he had a block of 10,000 budded trees one to two feet high. Four stakes were driven in an 8-inch square around each of the trees except an outside row of 600 trees. Around each set of stakes a burlap was wound, covering over the top and tying the end at the bottom with string to hold it on.

The freeze came and killed dead all that were burlapped. It froze 150 of the unwrapped trees but they grew new buds. The rest of the exposed trees were not seriously injured. Why this is true, Mr. Dodson could not explain but he knows of others who have wrapped their trees in the same way except to leave an open space 6 to 18 inches above the tops of the trees and below the cover. This seemed to protect them thoroughly.

FILLING IN THE SEEDLING BED.

[Written for the PACIFIC RURAL PRESS.]

In a warm rainless climate, transplanting seedling orange trees from the lath protected beds to the open nursery is attended by considerable loss of trees.

In replacing these losses, Roy S. Iganye of Los Angeles county irrigates the double rows of seedlings to be re-filled, to firm the soil and make it moist for the new seedlings. One man then opens holes a foot apart and eight or ten inches deep with a long handled narrow bladed spade. Another then places the seedlings which are about a foot long into the holes so they stand six or eight inches above ground. He presses dirt against the roots with a horizontal-handled dibble and another man tamps the dirt tight with a long-handled circular iron tamp about three inches in diameter.

CALIFORNIA POPCORN IS THE BEST.

To the Editor: Is there a market for popcorn and is it profitable to grow? W. W. M., Maine Prairie.

[Most of California popcorn is grown in Los Angeles county where, according to C. S. Marston, a wholesale merchant of Los Angeles, who handles it, only ten or twelve carloads per year are produced while over 25 are shipped in from the East. The demand for California popcorn is strong because it is raised in a temperate, dry climate, where irrigation is taken off when the silks begin to turn, drying the kernels and cobs so the corn is ready to pop four weeks after picking. Eastern corn must cure three times as long. Robert Haengge of Inglewood raises about 40 acres every year; and eastern field corn does not grow more thriftily. It stools out often eight or ten stalks from one kernel and each stalk averages about two salable ears. The price ranges about 4½ cents and the yield is about 3000 pounds per acre.—EDITOR.]

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Made for the potato raiser and truck gardener as well as the general farmer.

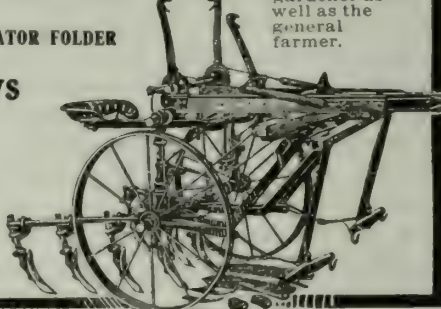
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OUR NINE MONTHS OLD

Orange, Lemon and Marsh Seedless Grape Fruit, the finest in the State, average ½ to ¾ inch at the present time.

Our buds were taken from orchards that produce almost two thousand dollars an acre. A complete line of Apples, Peaches, Apricots, Plums and all deciduous fruits and nuts.

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San Fernando, Cal.

Write for prices.

400,000 SEED BED STOCK

SOUR — SWEET — POMELO

Magnificent big stock—absolutely clean—sun-hardened plants with fine, fibrous roots—expertly packed and promptly delivered. Successful nursery-men all over the State are buying from us year after year, because they can depend on us for the best at lowest prices.

SEE OUR STOCK AND WE WILL GET YOUR BUSINESS

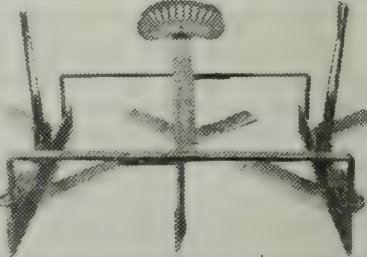
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Not only cuts down weeds, but KILLS them—and leaves finely pulverized top soil. Cuts any depth. Prevents evaporation by working under soil without disturbing soil on top. Write for circular.

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FLORIDA SOUR ORANGE

grown without shade, as are ours this season, are vastly superior to those grown under shade. They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencia's, Lemons and M. S. Grapefruit. Order now.

SOUTHLAND NURSERIES, F. H. DISBROW, Proprietor.
2141 East Colorado Street, Pasadena, California

SEED-BED STOCK GROWN OUT DOORS

Dried fig leaves by the ton are being demanded by eastern chemists, according to C. A. Chambers, secretary of the Fresno Nursery Co. as reported in the Fresno Herald. Three requests for quotations have been received by this company in a month. Californians seem never to have sold such a product but the chances are good for a starter this fall.

Citrus Activities of the University.

[Written for the PACIFIC RURAL PRESS.]

Under Dean T. F. Hunt, the College of Agriculture in 1913 organized a separate department for the study of citrus fruits, placing it in charge of Prof. J. E. Coit.

A summer traveling class was immediately organized for students who wished to do field work in visiting representative groves through the south. The enrollment was too heavy for convenience, but a large fund of fresh practical knowledge came from the interviews and observations made available.

Another similar trip will be made this summer for three weeks in upper California including the Fruit Growers' Convention at Davis and spending the other three weeks in the south. This trip is required of those specializing in citriculture.

Meanwhile three other purely citriculture courses have been offered and Mr. I. J. Condit added to the faculty.

One of these, enrolling 45 students, includes three lecture hours per week and six hours of laboratory work.

The outline of this course includes such topics as orchard plans and estimates of cost, orchard heating, botany of citrus fruits, varieties stocks, packing, picking, fruit judging, fumigating, by-products, and nursery work. A special research course has eight enrolled and a graduate course especially for research is open to those qualified.

The Graduate School of Tropical Agriculture and Citrus Experiment Station has 23 acres with buildings and equipment for research at Riverside. A staff of six assistants and an instructor assist Dr. H. J. Webber. A 20-year fertilizer test has been going on seven or eight years but the more important study of mottle leaf will occupy most of the attention until that problem is solved.

The last legislature appropriated \$60,000 with which to buy 200 acres for a new citrus experiment station. Dr. Webber looked over the 76 sites offered after which the Regents appointed a committee of Dean Hunt, Dr. Webber, and Prof. Coit to make another inspection in December. The committee looked them all over again in January and made sealed recommendations to the Regents who have not yet acted on them. Promoters of sites offered special inducements in the way of macadamized avenues, street car lines, etc., but the committee's recommendations are based on the suitability of the sites chosen, for experimental purposes.

Since Imperial valley promises to become a citrus center, a substation to work on semi-tropical and tropical fruits is in operation at El Centro.

And Prof. Coit hopes to have a small citrus grove at Davis to furnish material for class work and experimental work for upper California.

MOTTLE LEAF BEING STUDIED.

[Written for the PACIFIC RURAL PRESS.]

In addressing an association of southern California citrus growers a short time ago on various needs, a University professor was interrupted time after time with requests for information on the "mottle leaf." This indicates the very general anxiety in regard to a new destructive disease, which will yield to the control of

science in the near future as have other troubles in the past.

By 1888 the cottony cushion scale was threatening extinction to the citrus industry but is no longer a serious pest. So we no longer fear the scales and other insects and diseases.

For about two years the California Experiment Station has been searching for the cause and a remedy. They believe that the cause is very many millions of very small nematode worms which infest the rootlets of most mottled trees. Experiments are still in progress to confirm or deny this as a cause, and meanwhile remedies are being sought. The Riverside Citrus Experiment Sub-station is devoting a large part of its energy to this problem. One phase of this work is the planting of trees in pots with good soil and with nematode-infested soil to see if the worms will produce the disease in the absence of other causes. Many diseased trees on the station grounds furnish good subjects for observation and study.

The worms cause swelling and malnutrition besides robbing the roots of the sap they are sending and receiving. This seems to cause the characteristically mottled leaf and small unmarketable fruit.

CITRUS FRUIT FIGURES.

F. O. Wallschlaeger, secretary of the California Citrus Protective League is credited with the following:

In 1903 there were in California less than 50,000 acres of orange trees and something over 14,000 acres of lemons. Oranges have increased greatly and in 1913 the total acreage was estimated to be about 104,538, while the lemon acreage was 18,105. The shipments of these fruits can not be given with absolute accuracy, but close estimates show them, according to Mr. Wallschlaeger's figures, as follows:

Estimated total shipments, in boxes, oranges and lemons from State, November 1 to October 31:

Year.	Oranges.	Lemons.
1903	8,094,720	826,500
1904	10,246,656	868,000
1905	10,225,809	1,333,500
1906	8,973,342	1,182,200
1907	10,290,729	1,097,300
1908	10,742,944	1,585,000
1909	13,441,011	2,019,898
1910	11,187,792	1,627,480
1911	15,645,168	2,315,376
1912	13,680,612	2,146,550
1913	6,346,692	866,304

Estimated returns to California on oranges and lemons September 1 to August 31:

Year.	Returns.
1903	\$ 9,995,375.55
1904	11,505,895.43
1905	15,773,190.14
1906	21,024,814.16
1907	22,267,344.14
1908	21,238,213.26
1909	23,121,231.27
1910	25,011,027.85
1911	33,613,927.01
1912	28,240,135.64
1913	20,998,105.04

Over 480,000 square yards of different types of roads for experimental and object lesson purposes were constructed during the fiscal year 1912-1913 under the supervision of the Office of Public Roads, U. S. Department of Agriculture, according to Bulletin

53 of the Department, making a total of over 4,000,000 square yards of road

constructed under the supervision of that office since 1905.

Santa Anita Nursery

FORMERLY

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EXCLUSIVE GROWERS OF

Citrus Trees, Date and Fan Palms

We are offering over 100,000 Standard Citrus Trees for this season's planting. This stock is guaranteed to be absolutely uninjured by cold, and to be strictly FIRST-CLASS in every respect.

Sizes from 5/8-inch up, and choice stand.

This stock has all been developed on the Santa Anita (E. J. Baldwin) Ranch, in the San Gabriel Valley, than which no finer soil and climate for tree culture can be found in California.

WRITE US YOUR WANTS, and we will cheerfully assist you in every way possible.

Santa Anita Rancho, Santa Anita, California

Mrs. Anita Baldwin, Proprietor.

Postoffice, Santa Anita, Cal.

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GRAPE FRUIT VALENCIAS LEMONS NAVELS

FINEST GROWN

LEM. A. BRUNSON

SANTA FE SPRINGS CALIF.

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FOR DISCRIMINATING BUYERS

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DISTINCTLY THE BEST

Budded on one-year-old stock. Not damaged by frost.

Grown under expert supervision with unusual thoroughness and results.

8000 MARSH'S SEEDLESS GRAPEFRUIT. 6000 NAVELS. 8000 VALENCIAS.

READY NOW

Special prices for right-away contracts.

1,000,000 Rooted Olive Trees

MISSION, MANZANILLO, ASCOLANO AND SEVILLANO VARIETIES.

Our cuttings are taken from the finest bearing orchards in Southern California and are absolutely clean.

We also have some first-class selected bud orange trees and a nice line of rose bushes. For particulars and prices address

Tetley, Merriman & Gernert

Tetley Block, Riverside, Cal.

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NATURE GROWN TREES

ONE, TWO AND THREE YEAR OLD

FRED. L. BORUFF, San Fernando, Cal.

Grafted Walnut Trees

Placencia Perfection
Neff's Prolific
and Eureka

IF YOU WANT FINE BIG TREES ON BLACK ROOTS, STRICTLY TRUE SELECTED STOCK WRITE FOR PRICES.

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300,000 FIRST-CLASS ORANGE SEED BED STOCK.

Ready for delivery. Genuine Florida Sour Stock. Sweet Stock grown from carefully selected California seed. Clean, vigorous and thrifty. Correspondence solicited.

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C. H. HARLE, Mgr.

Home Phone 654-J.

27 N. Olive St., Alhambra, Cal.

Citrus Trees and Pure Bred Live Stock.

(Continued from Page 385.)

to insure the best breeding and the best chances of getting trees which would pay a profit, by making it a stigma to take buds from trees not known to be profitable yielders. Some steps have already been taken this way. The advisability of selecting buds from vigorous woody shoots or suckers of oranges has not been settled, but while there is a doubt, there should be no doubt unless other factors enter; there are enough high-yielding trees to furnish buds, from fruiting wood, for all the nursery stock grown.

But the individual attention cannot stop with the nurserymen. If they furnish good heredity, it remains for the grower to furnish the proper environment, without which not all of the well bred qualities in the tree can be developed into marketable fruit.

As noticed in another article, A. L. Brooks, of Placer county, goes ahead of the fertilizer wagon and tells the men what kind and how much of it to apply to each tree, in addition to a heavy vetch cover-crop and barnyard manure; he notes the appearance of trees whose roots have been standing too long in water, and drains the ground; he does not irrigate by the week, but by the block, giving upland blocks a little more frequent or longer wetting, but judging their needs entirely by their appearance and yield.

The need for individual attention to oranges especially is more evident to those who have worked with pure-bred stock, which cannot profitably be turned loose to forage for themselves on desert plains, as the wild mustangs of the West, the long-horn cattle of Texas, or the razor-back hogs of the South. Not only is there too much money invested to justify the greater risk, but the response of pure-bred stuff is quicker, greater, more expansive, and still more profitable, while lack of attention would mean no more than the questionable profits derived from scrubs.

As Prof. Coit points out, the Washington navel orange is abnormal, having been developed and propagated by man ever since its discovery as a bud sport or seedling many generations ago. Having no seeds unless pollenized by other varieties, it never has propagated itself, and never can.

And Luther Burbank would speak from his lifetime of plant breeding, to say that when the hand of man intervenes to remove discouragements from a line of plant heredity, the resulting plants drop the means of defense with which nature originally provided them and devote their energies to the purpose for which man has selected them for his own profit.

So, highly bred plants may more easily become unprofitable under individual neglect than those which have retained their natural hardiness against natural discouragements.

And the citrus grower of the future is the man who will survive because he gives their individual needs individual attention.

WATER-GROWN AVOCADO.

To the Editor: I have an avocado (alligator pear) eight months old, and it is 13 inches high. I have it plant-

ed in a large fruit jar, with nothing but water in it; it is well rooted, and I would like to know when is the best time to plant it out in the open ground and how old it should be. Will it thrive well in Modesto?—V. C., Modesto, Cal.

[Plant it out immediately if the ground is warm and not too wet. Rig a cover against too great heat and possible frost until it starts to growing well. We do not know what it will do for you.—EDITOR.]

THE CAUSE OF CITRUS GUM DISEASE.

[Written for the PACIFIC RURAL PRESS by R. R. SNOWDEN.]

I wish to call attention to an unfortunate and all but universal practice of the orchardists of southern California, and the unvarying penalty attached to their error. It is the planting of citrus trees with their root-crown deeply buried.

Being familiar with the evils attending this procedure in Florida it occurred to the writer that it may be responsible for some of the troubles of the citrus growers here.

Observation in many orchards, both lemon and orange, during the past five years seems to prove conclusively that the burying of the root-crown is a fruitful if not the most fruitful cause of gum disease in these orchards; for it is intimately associated with the disease wherever found.

I have invariably found that trees fifteen years old or older planted with their root-crown 10 to 14 inches deeper than Mother Nature grows them, show gumming which increases with age; while those set with the root-crown at or near the surface are rarely affected. But of course cases of recent filling or removal of the earth are not expected to support the above findings.

Although based on many observations my claim is most strikingly attested in an old orange orchard in Ventura county recently examined. The soil has long been washing from the higher to the lower portion so that the embanked trees have suffered severely from gumming—some of them having been removed on account of it; while not a case of the disease can be found among those from which the earth has long been removed.

The writer is therefore convinced that no treatment however effective apparently, will prove a permanent cure for gum disease until this fundamental cause is removed.

DRESS UP FOR THE EXPOSITION.

Much can be done, not only in suburban, but in truly rural places, in decorating California for next year's great visitation by an admiring world. Enthusiastic visitors will be motoring everywhere; therefore, let no one think his place too remote for tasteful adornment and for a good cleaning up of highways and farmsteads. The following items are therefore of wide significance:

Contra Costa county folk are commencing to dress up their farms and home places in anticipation of the 1915

In the making of "Gold Bear" Fertilizer the same accuracy, precision and care for detail is used as in the manufacture of our food products.

Competition can never be strong enough to compel variation of formulae, the cheapening of materials or method of manufacture.

Price fluctuations on the raw materials which enter into the making of "Gold Bear" Fertilizer do not affect us as they are produced as by-products in our meat packing plant, which is the largest west of Omaha.

"Gold Bear" Fertilizers are scientifically correct, mechanically perfect—the result of knowledge gained by 17 years of fertilizer making for California soil and conditions.

Write for the "Gold Bear" booklet.

WESTERN MEAT CO.

704 Townsend Street
San Francisco

exposition, when many residents of the San Ramon valley expect to entertain relatives or friends from back East during the big fair in San Francisco next year. More ornamental trees, shrubs and other plants are being shipped to Alamo this spring than for many years past. Daily by express, freight, and parcel post, numbers of residents are getting shipments of flowers, seeds, and ornamental plants.

Among those who are doing the most extensive work in this line are Mr. and Mrs. Emery Smith, of Oakland, who have purchased a part of the old Hemme grove as a site for a beautiful country home. Last week they set out a carload of shrubbery,

ornamental trees and other plants, many of them rare and costly. The plants are all good size, so they will not have to wait long before their place will present a most handsome appearance.

Attorney Lin S. Church, of Berkeley, is also beautifying his country place opposite the Southern Pacific depot by setting out a privet hedge, trees and bushes of various kinds. President Walter Arnstein, of the Oakland & Antioch, is adding more to the attractiveness of his palatial country place at the head of Camille avenue.

Dr. Alexander Warner has a Mission grape vine over 100 feet long on his ranch in Eldorado county.

Kirkman Nurseries

RELIABLE TREES AND VINES

Orange—Lemon—Pomelo Trees

FRESNO CITRUS TREES are best acclimated for CENTRAL and NORTHERN California.

The superiority of our Citrus trees for hardiness north of Tehachapi HAS been fully demonstrated in hundreds of Citrus orchards throughout Tulare County, and along the Orange belt through the Sacramento Fair Oaks Section and Butte, Tehama, and Glenn Counties.

Some competitors attempt to convey the impression that we are subject to more or less injury from cold. On our new Citrus nursery plant at Avocado Station on the Santa Fe we have NO INJURY either to Citrus trees or to our Avocado orchard, which contains thirty different varieties of this new fruit.

We can still deliver absolutely first class stock in Eureka Lemon, Washington Navel and Valencia Orange and Marsh's Seedless Grape Fruit at reasonable prices.

OLIVES

We have propagated Mission Olives from the famous Minnewawa Mission trees and Manzanillos from adjacent sturdy bearing orchards.

Now is the time to plant Olive trees, and anyone who misses the opportunity to get a good Olive orchard started is neglecting to lay the corner stone to fortune. We believe in it to the extent that we are planting three hundred acres of them ourselves near our nursery plant at Borden in Madera County.

We still have a good supply of Olive trees in all sizes.

Send for our Catalog and Treatise on Fruit Growing and let us confer with you regarding future planting.

Remember we grow more than five million deciduous fruit trees and vines per year.

Remember also that we have been at it more than a quarter century.

We are just closing our most successful season, thanks to you, our customers—Our Best Friends.

KIRKMAN NURSERIES

2525 Tulare St.

Fresno, Cal.

Trials of Texas Peach Growers.

According to the census of 1910, Texas had over 12,000,000 bearing and non-bearing peach trees, and California about the same number of each, but the Texas peach crop was figured at a value of \$1,400,240, while the California crop was valued at \$8,563,427.

California peach-growers have had more or less of a hard time for a year or so, and if they read something about Texas, they may think their grief lighter. L. R. Dorland writes in the Texas Farm and Fireside, among other things, as follows:

What will be the future of the peach in Texas? Thousands of growers have become discouraged and many have given up in despair and changed from the raising of peaches to the growing

of cotton and corn. The uncertainty of the seasons has kept the grower in hot water continually. Prospects may seem fine for a bumper crop, but nice warm weather in January causes the fruit buds to swell, only to be nipped in a stiff freezing norther in February or March. This winter has been exceptionally warm, and as a result the peach trees responded to the balmy weather. Buds had swollen considerably when the cold wave of February 6 and 7 swept over eastern Texas. How many peaches there will be this season is still a matter of much speculation, but it is the prevailing opinion that the crop will be very light. Therefore, the freaks of the weather man often cause havoc among the

would-be prosperous peach-growers, and it is no wonder that they become disheartened when the bright prospects of a big crop are wiped out in one night.

Another discouraging feature is the unsatisfactory methods used in marketing the crop. When there is an abundance of peaches, the price paid to the grower is very small and in some instances peaches are practically given away. While other seasons, when peaches are scarce, the price paid is quite satisfactory. It would seem that the demand was far less than the supply in case of bumper yields, and vice versa with the light yields. But this is not always the case. Certain markets are glutted with the fruit while other markets are not given their full quota. The price at the glutted market governs the market

price paid to the grower. The grower must submit to this condition and accept what he can get. Peaches, being a perishable crop, must be sold at once. This puts the grower at the mercy of the buyers, who are not slow to take advantage in directing prices.

Another drawback to the peach industry is the increasing number of insect pests and fungous diseases. In the past, the peach-tree borer has killed thousands of trees in the orchards, and the average grower, not being acquainted with the life history of this pest, has been unable to prevent the injury to his trees. In spite of his honest desires to check this pest, he has only partly succeeded. Although the borer has done a great deal of mischief in the past, there is still

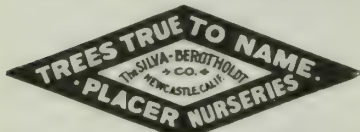
(Continued on Page 407.)

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PEDIGREED AND TRUE

Our soil grows good roots and a hardy tree, while our foothill district is free from every disease or pest.

Write us now concerning
Your next season's planting.
Our Assortment is Complete.



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Power Sprayers, Barrel and
Bucket Pumps, Rods, Nozzles,
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Free for the asking, \$1000
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The Rhubarb, Berry and
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HEMINGWAY'S LEAD ARSENATE

EASY TO MIX
STAYS IN SUSPENSION
HIGH ANALYSIS

Send for booklet and prices.
Full stocks carried by Coast Agent.

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ORANGE SEEDLINGS

CHOICE FLORIDA SOUR
SEED BED STOCK.

\$10 PER 1000.

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DATE GROWING

Just issued—a complete treatise
on Date Growing; 300 pages, 40
illustrations. The only book pub-
lished which gives a full, clear and
practical account of growing the
Date Palm, \$2.00, postage 16c.

WEST INDIA GARDENS,
Altadena, California.

Handling Dried Fruits.

[By Jos. T. Brooks, Secretary San
Jose Chamber of Commerce.]

The dried fruit of Santa Clara valley is possibly three-fifths of that shipped from the Pacific coast; and it is strange, that the French prune being the principal staple of the Santa Clara valley, 60 to 70% of this product is shipped to European ports and consumed in foreign countries. Much of it is shipped by rail from San Jose to Oakland, where the cars are unloaded at long wharf onto deep-water vessels which deliver their cargoes directly to the English, French, and Mediterranean ports.

During the fall, winter, and spring of 1912-1913 the following quantities of dried products were shipped from this valley:

Prunes 55,000 "short" tons of 2000 pounds, peaches 3500 tons, pears 100 tons, dry onions 410 tons, dry beans 500 tons, dry apricots 7000 tons.

All of this was grown in Santa Clara valley, and it is interesting to know that according to the returns to the county assessor, we have the following number of fruit and nut trees:

Apple 51,150, apricot 588,400, cherry 393,000, fig 3000, lemon 960, nectarine 1432, olive 16,500, orange 1960, peach 654,100, pear 146,700, plum 294,400, prune 5,690,500, quince 2740, other kinds 426,500; total fruits 8,271,342. Of nut trees, there are, almonds 26,500, and walnuts 16,400. Grapevines of all kinds occupy 9720 acres.

REMEDY FOR LOW PRICES.—The greatest percentage of peaches and apricots are either shipped green or canned and you will notice that a comparatively small quantity is dried. The drying process is resorted to with apricots and peaches when the orchardist thinks that the price offered is too low for the green fruits. By drying he can preserve the fruit and sell during the winter season at a figure which is considered very profitable. Especially may this be said of dried apricots. Prunes are never sold other than dried from this valley, and the crop varies from 40 and 50,000,000 pounds to 130,000,000 pounds annually.

PRUNES FROM ORCHARD TO MARKET.—Prunes are permitted to ripen on the tree and fall to the ground. Just before the crop is ready to ripen, the ground is thoroughly harrowed and dragged until it is pulverized, so that the fruit will not burst when it drops or is shaken from the tree. With apricots and peaches it is different, as they are picked from the tree by hand. Prunes are picked from the ground into fruit boxes holding from 40 to 50 pounds and taken to the dipper in which they are dipped for an instant in a boiling solution of lye water, which contains about two pounds of lye to 60 gallons of water. This cracks the skin into fine checks to allow more rapid drying. Many of the large concerns buy caustic soda, 98% pure, in drums, instead of the pound cans of lye sold in the stores.

In sections where morning fogs would delay the drying they are rolled over a shaker whose bed is covered with needle points and continually washed with a spray or stream of water to keep the points from gumming. These points prick the skin, giving the prunes a better chance to dry quickly. From the needles they pass over a perforated grader which drops them through in about three

sizes. These are run onto separate drying trays 3x8 feet in size and put upon the ground in the open air to dry. Each day the fruit is turned over, and the men who do the turning become so adapt at it that one at each end of the tray can, by giving the tray a few shakes, turn all the fruit upon it. It is dried in three to five days, and is then put into bins, or in some cases into sacks weighing 75 to 100 pounds and hauled to the packing houses for processing. They in turn run the prunes over graders, which separate them into sizes ranging 20 to 30 per pound, 30 to 40, 40 to 50, 50 to 60, 60 to 70, 70 to 80, 80 to 90, 90 to 100, 100 to 120 to the pound.

When the prunes have been graded, they are treated to a steam bath which softens and cleans them, and packed in boxes weighing usually 25 pounds. Foreign shipments are packed in boxes weighing 38 to 50 pounds. Some of the packers formerly used a solution into which they dipped the dried prunes, the process of which was known only to themselves, but it was principally scalding water and licorice, glycerine, glucose, or logwood, which gave the prunes a glossy black appearance. This practice is practically abandoned because the trade wants prunes with the bloom on, not the glossy kind. The reason that dried prunes keep so well, is that French prunes contain a very large percentage of sugar, and this sugar preserves them.

There is a prune known to the commercial market as the Ruby, which is given a sulphur bath in the sulphuring house. It turns them a very pretty pink color, and for many years the Ruby prune received recognition by the fancy trade, but sulphuring has now generally been dropped.

The San Jose Chamber of Commerce is responsible for the statement that the Santa Clara prune brings 1/2 of a cent per pound more in the open market than prunes from other sections, although there are some sections in California where a very nice French prune is being grown.

Of the prunes there are many varieties such as the Imperial, German, Italian, Silver, Sugar, and some new varieties by Burbank, but the great quantity of trees called for in the nurseries are the French variety of which the nursery stocks were early sold out this winter.

The French prune was introduced into this valley in the early fifties by Louis Pellier, a French sailor. He started a nursery on property near Evergreen, which is now owned and occupied by his nephew. The prune cuttings were procured in the Villa Neuve d'Agen, France, whence the Santa Clara valley California prune derives its name Petit Prune d'Agen.

SULPHURING APRICOTS.—With apricots, especially, sulphur is necessary. The fruit is cut in half and pitted, then spread upon the trays and put into an airtight sulphur house. These are made just large enough so that the trays may be slid in one over the other so that the sulphur fumes can permeate every part of the house. About one pound of powdered sulphur is poured into a hole in the ground and set fire, and as long as there is any oxygen left in the house, this sulphur will continue to burn and pour forth its volume of dense smoke. This process gives the apricots a very pretty

golden appearance. The apricots if dried without being sulphured, have a dark uninviting appearance, and are inclined to get wormy, although by dipping them in a strong solution of salt and hot water the possibility of infection might be overcome. Dried apricots are treated to a steam bath to make them pliable, and packed in boxes similar to prunes.

In Germany, the government permits 0.125 of sulphur-dioxide to remain in the fruit, but we have never had any restriction, and from a test made in the University of California the dried fruit squad, which was fed upon sulphured fruits, proved conclusively that the process had no injurious effect; on the contrary, they gained weight upon the diet.



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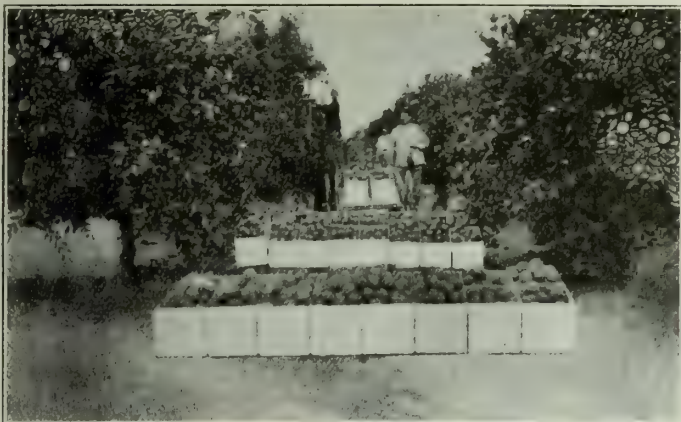
Orange Trees Like to be Petted.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

More and more it is learned that oranges may be grown in favorable locations in all parts of California. For one cause or another, some of the older plantings in the north central

next season from the same grove.

SHIPPING SEASON PRECEDES SOUTH.—One advantage Placer county shares with other districts of the central citrus belts is the early ripening of the fruit. Last season, Mr. Brooks shipped the first car of oranges that



A Citrus Fix-Up for the Photographer.

section do not pay. This is true of Placer county; but that the trouble is in the handling of the orchards rather than the climate or soil, is clearly shown by A. L. Brooks, who took

left the State. These were unsweated. The season before that, he shipped the first oranges of any kind, in October.

Several reasons account for Mr. Brook's success in a neighborhood



Orange Packers at Work.

charge of the Whitney ranch near Penryn four years ago. At that time, the 140 acres of oranges, well grown trees, were producing nine carloads a year. Mr. Brooks had handled oranges

where an orange grove is considered a negative asset.

INDIVIDUAL FERTILIZATION.—Perhaps the first reason is the individual attention each tree receives in fertiliza-



An Old Seedling Orange Grove—Largely a Reminiscence.

in the south and he knew what was wrong with the trees, the soil, and the cultivation. He raised the yearly crop from nine carloads to 22 the first year, 35 the following season, and 47 carloads last season which closed in January. Over 70 carloads are expected

tion. Three formulas are used for mixing commercial fertilizers on the place. All three kinds are taken separately through the orchard at the same time; and Mr. Brooks goes ahead designating which kind and how much to apply to each tree. Workmen

spread it evenly by hand over the ground. Last year the fertilizer was pretty strong on potash and phosphoric acid; on account of the weak market for oranges that season Mr. Whitney objected to the expense of commercial fertilizers, but allowed Mr. Brooks to ship over 50 carloads of barnyard manure this spring. This is spread evenly all over the vetch which covers the ground thickly. Vetch is sown in September. As yet, though the soil is decomposed granite, fertilization has never been so heavy as common in the south.

TREES DROWNED.—Several trees died last winter because water stood around them. Open ditches have been dug for drainage, and V boards will be put in as will later be described to take the place of tiling.

Vetch and fertilizer are plowed under in March and about six cultivations through the summer are alternated with as many irrigations. One section is cultivated while another is watered, about 25 inches being used all the time at \$9 an inch for the season.

Personal attention to each tree has produced an orange grove which Mr. Brooks proudly claims to be in the best condition of any in the state. And certainly a more beautiful sight could scarcely be desired.

SCORING ORANGES AND LEMONS.

Orange fruit perfection was figured at the National Orange Show at San Bernardino on a basis of 100 points as follows:

Pack 10 points, shape 10 points, stem, presence 5 points, rind, color 10 points, texture 10 points, thickness 10, blemishes 5, navel or seed, size 3 points, shape 1, prominence 1; juice, amount 10 points, flavor 10; rag, amount 3 points, character 2; weight, 5 points; size, 5 points.

The requirements of the lemon are: Shape, type 5 points, form 5 points; stem, presence 5 points; rind, color 10, texture 5, thickness 10, blemishes 10; seeds, number 10 points; juice, acidity 10 points, flavor 5, amount 10; rag, amount 3 points, character 2; weight, 5; size, 5.

juice, abundance 5, color 5, flavor 10; rag, amount 3, character 2; specific gravity, 5; size, 5; total, 100.

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Deep Plowing and Soil Moisture.

Although the special reference to soil conditions existing in Oklahoma do not exactly apply to California, the principles correctly cited by Dr. W. E. Taylor in the Furrow, an intelligent tillage journal, are correct and suggestive for this State. Dr. Taylor says:

It should require no more scientific education to understand why ground that has been plowed deep will absorb and hold more water than if plowed shallow than it does to understand why a gallon pan will hold more water than a quart basin.

It should be very plain to everyone that more water is absorbed into the subsoil, less lost by evaporation, and less by running away if eight, ten or twelve inches of surface soil is loose and porous than if the surface layer of pulverized soil is one-half the thickness.

Mr. Lackey, near Oklahoma City, plowed forty acres twelve inches deep as soon as the frost was out in the winter. In the spring he planted the entire piece to corn. He maintained a mulch by shallow cultivation. A crop of 45 bushels of good corn per acre was secured, while his neighbors raised practically nothing. There was no rain during the growing season, but enough moisture was stored in the deep seed-bed and subsoil to supply the crop even during the most severe drouth that country has ever experienced.

Another farmer in the same drouth-stricken section planted oats on a field that was plowed very deep during the fall and secured 60 bushels per acre, while his neighbors, who plowed shallow in the spring, secured nothing.

It is safe to say that if the farmer will disc his land before plowing and plow it deep in the fall, he will take out an insurance policy against loss from excessive drouths either in humid or dry land sections.

What is Deep Plowing Accomplished?
—As previously stated, humus or organic matter is indispensable, and if in the work of plowing, subsoil, which is usually quite devoid of humus, is brought to the surface, the crop is sure to be deficient for the reason that soil bacteria require humus in order to perform their function of making plant food compounds from the elements.

Therefore, unless the soil contains organic matter to a good depth, care should be taken to add humus as the seed-bed is deepened. The plow should be run a little deeper each year, adding barnyard manure or plowing under green crops with each plowing until a good depth is obtained.

Again, if the subsoil is sand or gravel and is near the top, the ground should not be plowed deep enough to bring it to the surface. In some soils a conglomerate exists just on top of the gravel, rendering it impervious to water. Care should be taken not to break up that hard substance, for to do so would permit water to escape in the loose ground beyond the reach of the plant roots. Sandy soil can be plowed deep; in fact, it is beneficial if an abundance of organic matter is added.

[It should perhaps be stated that although the importance of humus is not exaggerated, it is a fact that we do not need to be so careful in deep plowing with relation to humus con-

tent of the different depths of soil. It often happens that California soils are supplied with humus and support bacterial activity to a considerable depth. It is also true that there is more humus found in the second foot than in the first foot. Therefore we do not have to be so careful about gradually deepening the surface soil.—
EDITOR.]

STRAWBERRIES IN AN AMATEUR'S GARDEN.

To the Editor: I put out some fine healthy Patagonia strawberry plants about the first of December. They

are growing vigorously and are beginning to blossom. Would it be advisable to allow them to bear this year? How many runners should I allow them to throw out this fall? Or would it be better to pinch off all blooms and runners until next year? Do you advise the use of nitrate of soda as a fertilizer for peas in a small home garden not run for profit? I have found the Press of great assistance in my efforts to do a little farming on a city lot, during the few months I have been receiving it.—R. H. C., Stockton.

[As an amateur likely to give the plants good growing conditions all summer, you can be a law unto yourself. You can let the plants fruit

without injuring them, and you can grow them as singles for several fruiting seasons unless you wish some more plants for your own use. If so, limit the runners to meet your needs and husband the fruit capacity of the parent plants thereby. Fruiting singles instead of making matted rows is also a commercial method if one is willing to give the plants the attention required. You can use nitrate of soda on all your plants by scattering very scantily before a shower or before using the hose. You might use an ounce to the square yard of surface. Of course, you will not use it at all on plants which grow riotously when you are sure that they get moisture enough.—EDITOR.]

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Roeding's
Trees Give
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Secure Water Before Citrus Planting.

[Written for the PACIFIC RURAL PRESS.]

Orange trees feed almost entirely in the upper 36 inches of soil according to Prof. J. E. Coit of the University of California. It is fortunate for some growers in some seasons that the long tap root also has a few feeders which can nurse the tree along in dry weather; otherwise the tree would die when the first three feet of soil dry out.

In selecting from the 76 sites offered for the proposed citrus experiment station in southern California, one of the first and one of the absolute requirements was that a permanent and ample water supply be insured.

With all of his enthusiasm for lemons in the Santa Clara valley, Jos. T. Brooks does not mention lemons without mentioning the need of an adequate water supply.

The most expensive system of irrigation known, in first cost, is the underground piping system, yet practically all the growers there are installing it for greater stability of water supply in the future when the increased plantings may strain the total water available.

Water was one of the three prime requirements in selecting the sites in Glenn county where James Mills, of many years experience in southern California, is planting 10,000 acres of citrus fruits under the main canal of the Sacramento Valley Irrigation Project.

A. L. Lewis of Tulare county has leveled as much as possible of his land for irrigation because it saves hours of work.

Streams running through the groves or even freezing in checks, saved many orchards from frost that would have hurt them more seriously two years ago.

We can make up in flavors what Florida gains in juiciness by her humid climate.

Perhaps one reason why citrus trees need more careful irrigation is that they have no heart wood, every cell in a healthy tree is live sapwood or bark. In other trees the heart wood consists of dead cells which merely strengthen the tree.

Another reason is the evergreen foliage with large surface exposed perennially to the drying weather. Evaporation is rapid on this account, and perhaps rapid evaporation is necessary to give drawing force to the sap, which does not flow through the tree so freely as in other kinds.

So the successful citrus grower of the future will have water ready to use when the trees need it.

THE PULP OF THE LATE BULLETINS.

In fumigating oranges, the leakage through four square inches of cloth is equivalent to that through a hole one-tenth of an inch square or one-four hundredths of the surface. When the fibers are swollen by absorbing moisture, the leakage is diminished. Pressure gages for determining leakage are more practical than volume gages.—Cal. Expt. Sta. Circ. 75.

Mottled leaf of citrus trees, and microscopic nematode worms in their rootlets, seem to have a direct connection, from examination of 300

specimens of healthy and unhealthy trees from all the leading citrus districts. The leaves turn yellow between the veins but remain green along the mid rib and laterals.—Cal. Expt. Sta. Circ. 85.

Red spiders and similar mites do considerable injury to southern California citrus groves. They live and breed entirely on the trees, developing 12 to 15 generations a year, each female laying about 30 eggs. The most effective control measures are the application of dry sulfur and hydrated

lime on the commercial lime-sulfur spray.—Cal. Expt. Sta. Bul. 234.

FREE CITRICULTURE STUDY BY MAIL.

[Written for the PACIFIC RURAL PRESS.]

A free correspondence course of 21 lessons in citriculture is offered by the University to all who will do the work. The first two lessons are sent at once; when the questions on the first one are answered the third lesson is sent. The course is intended for the beginner rather than the expert and gives details in a way that is readily understood. The first lesson is historical and general, the second takes up the botanical structure and habits of

trees and fruit. Interesting points brought out are that Washington navels are borne without pollination of the flowers; there are three periods of tree growth per year; Valencias keep well on the tree so that they are harvested from May 15 to December 1, overlapping the navel season and making orange picking the year around.

One hundred and twenty-five acres of olives in one piece and 320 acres in another are to be planted in the Oroville district. Agitation for a university experiment station at Oroville to develop an earlier ripening olive and learn best methods of fertilization, pruning, and irrigating is engaging attention of the University authorities.



If you figure on planting citrus trees it will pay you to get our prices and suggestions. Our many years experience in the successful growing of citrus trees and a close intimate touch with conditions, enables us to advise with you intelligently. We have a splendid stock for this season's planting—and our prices are **RIGHT**.

We call particular attention to our magnificent stock of

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Constructive Agriculture—No. 12.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

If there is any kind of agriculture that is constructive, in all respects, it is the transforming of arid or desert land into productive farms. In this respect, the work being done by pioneers in the Antelope valley should, it seems, be better known to all. This huge valley, lying 78 miles by rail north of Los Angeles, embraces an area 30 miles wide and 70 miles long. Until six or seven years ago it was considered worthless by most of the older residents, who were, for the most part, cattlemen.

UNDERGROUND WATER-SUPPLY.—This opinion prevailed, due to the fact that there were no mountain streams to supply irrigation water, and the principal vegetation was sagebrush and yucca palms. Although there were no running streams, the mountains on all sides provided a large watershed, thus causing an abundance of underground water which has been developed into artesian wells in many parts of the valley.

As before mentioned, the new era of the valley started some six or seven years ago, when the idea was conceived that the land would grow alfalfa if water were obtained and the land put into proper condition. Accordingly, wells were bored and pumping plants installed, and though there were, of course, many discouragements, as in all new countries, it was finally shown that good crops of alfalfa could be grown on a large part of the

Very likely a book could be written of the discouragements encountered at first, but suffice it to say that after a while the farmers found how to overcome all of the obstacles, and now the development is being done with a more intelligent idea of conditions.

MARKETING ALFALFA THROUGH THE DAIRY.—So far, alfalfa has been the principal income of everyone in the valley, aside from the grain farming and almond raising done along the edge of the mountains. There were two reasons for this: First, quick returns were needed and could be had with alfalfa. Second, being so close to Los Angeles, where high-priced hay has been the rule for several years, there was always a ready demand.

This system of marketing the alfalfa crop was all right at first, when money was scarce and hay high; but this year the hay market is poor and the first dairy cows are being shipped in. It is the general belief that with dairy cows, sweet cream and whole milk can be shipped into Los Angeles, to the benefit of the bank accounts as well as the fertility of the land.

ALFALFA IRRIGATION.—It is estimated that at present there are between 7000 and 8000 acres planted to alfalfa and while not all of the land is suited to alfalfa, it will be seen that with such a large area the development along alfalfa lines has only fairly started.

Although flowing wells are the rule, the water left is usually 20 feet or more when pumping plants are installed. Heretofore gasoline engines have furnished the power for the pumping, but there will be electric power lines extended through the valley in a short time.

The cost of cleaning and leveling the land varies so much, that we were unable to get a reliable average cost.

FRUIT DEVELOPMENT.—While alfalfa

has done most in developing the valley, many of the farmers are also planting fruit orchards, allowing the alfalfa to produce an income until the fruit shall come into bearing.

One might suppose that planting fruit, in this arid section, is pretty much of a gamble, but fortunately some of the early cattlemen planted family orchards, and in that way its worth as a fruit country seems to be pretty well demonstrated.

As the altitude is over 2000 feet and both pears and apples did particularly well, on the old ranches, these two fruits are the main ones being planted for commercial purposes.

That these fruits will in the future be factors in the valley's growth, is shown by the fact that over 100,000 trees were planted in one month, this spring; and it is estimated that, at the end of this year's planting season, there will be 8000 or 5000 acres of orchards in the valley.

Both apples and pears from this section are said to be fine flavored and good shippers, one small orchard having shipped to the London market last year, where good prices were received for pears competing with fruit from all over the world.

The main town in the valley is Lancaster, where the railroad maintains a station.

From the development work already done, it looks as though water and man are now in a position to conquer this desert section of a few years ago, and thereby add another prosperous agricultural district to the State's resources.

CHANGES IN CITRUS TARIFF.

The new tariff schedule on citrus fruits is given in the first lesson of the University correspondence course.

Oranges, lemons, grapefruit and limes, in packages of a capacity of 1 1/4 cubic feet or less, 18 cents per package; exceeding 1 1/4 cubic feet and not exceeding 2 1/2 cubic feet, 35 cents per package; exceeding 2 1/2 and not exceeding 5 cubic feet, 70 cents per package; exceeding 5 cubic feet or in bulk 1/2 cent per pound.

The former duty was: Oranges, limes, and pomelos, 1 cent per pound; lemons, 1 1/2 cents.

Citric acid is reduced from 7 cents per pound to 5 cents. Additional duty has been placed on some by-products as citrate of lime and oil.

The protective duty was one of the up-builders of the industry, but there is no doubt that it is now able to stand alone.

A FRIGHTFUL EXAMPLE!

To the Editor: Please tell me in your next Press what to put in lime to make white wash for building so soon. And, crude oil with ochre so it will make a good paint for roof of building.—SUBSCRIBER.

[We have to make a frightful example of you for the good of other readers. If you had sent your real name and postoffice (as we print the requirement in every issue) you would have received the recipes for which you ask by mail. We take such trouble because we cannot everlastingly print these things. We have printed the recipes for durable whitewashes several times a year for the last decade and they seem to stick everywhere except to the memories of readers.

We have embalmed them in our "Thousand Questions on California Agriculture" along with 999 other things we are tired of answering. As

for the crude oil paint, it works well and is very simple: stir in the ochre, make a mixture that will spread well and slap it on with a brush.—EDITOR.]

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(get profit and pleasure
from that back yard)



The hours you spend with hoe and rake will never be wasted. You will experience new bodily vigor, the joy of being a producer, and pleasure in the delightful freshness of your contribution to the larder.

Germain's Garden Collections

The prices on these collections are much lower than the regular list would total on account of our being able to pack during the dull seasons. The selections are by our experts, and the quality of the seeds the very best. Planting directions are on each packet.

Small Vegetable Garden—50 cts. Prepaid Contains 15 packets, worth over 75 cts.

Medium Vegetable Garden—\$1.00 Prepaid Contains 25 packets, worth over \$1.50

Large Vegetable Garden—\$2.50 Prepaid Contains 43 packets, worth over \$4.00

Germain's Country Home Collection \$5.00 Express prepaid. Contains 53 packets and includes a copy of "Practical Farming and Gardening" (Price \$2.)

Many splendid collections for the flower garden are listed in our complete Seed and Plant Catalogue—Free for the asking.

Please mark letter Dept. 0

Germain

Established 1871

SEED & PLANT CO.

326-328-330 SO. MAIN ST.

LOS ANGELES, CALIFORNIA

Ground Phosphate Rock

The Natural Plant Food and Permanent Soil Builder.

1000 lbs. per acre once in each four years will cost about \$1.00 per acre per year. At Penn. State College \$1.05 invested in Rock Phosphate gave increased yields of \$5.85—over 500%. At Maryland Ex. Station \$1.96 1/2 gave \$22.11—over 1000%. At Ohio Station each dollar paid for itself and gave \$5.63 profit. At Illinois Station \$2.50 gave the same return as \$250 invested in land.

Each ton contains 280 lbs. of phosphorus, not rendered available artificially by high-priced destructive acids, but so finely ground as to be come available in nature's own way.

UNITED STATES PHOSPHATE CO., Salt Lake City, Utah.

Write for literature.

"Perfection of fineness in grinding," our motto.

Will the Immigrants Co-operate?

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

The Panama Canal and European immigration suggest each other, as California and her "golden crop" of oranges suggest each other. What California will do with the European immigration when the Panama canal opens is very much the concern of the citrus growers.

The present lead which California has, within a few decades, made for herself in the citrus world is due primarily to two factors, the natural advantages and the character of the growers themselves.

Requiring some capital to start a grove, that capital invested making residents more or less permanent, orange culture has attracted only those who had made some money in business life and who came partly for the climate. Such people knew the value of organization—they knew the necessary subjection of self to the greater organization—interests in order that self might profit in the long run.

The navel orange which has made our industry, came to California in the shape of two trees of an untied variety in 1873, three years before Los Angeles had rail connection with the East. With the growth of production from nothing to the present season's estimated shipment of 15,000,000 boxes, the people who cultivated the trees learned the need of coöperation and practiced it.

Local associations were formed covering well defined sections, and these sent representatives to a district association, which handled the marketing of the members' crops. Seventeen such district associations, composed of 115 locals, whose membership includes 65% of California citrus growers, now market through their non-profit-making California Fruit Growers' Association.

No man packs his own fruit. All of the crop is sent to the packing house of the local association where a uniform pack is made, holding to the minimum the variations due to the judgment of different men.

Each orange is handled by men with cotton gloves to avoid all abrasions, each orange is wrapped in a paper bearing the name of the local association and its place of business, and all are packed in uniform boxes labeled with the name and location of the association. No man is allowed to bring oranges from another district to ship out under his label. This is valuable advertising for those who put up good citrus fruits well packed; buyers are likely to order the same brand in the future, and every consumer may know whence came his orange or lemon or pomelo or limes.

A visit to the San Francisco market showed many boxes labeled "California Oranges," on which the grower or packer had evidently not cared to put his name or location. Of course these came from groves outside the Exchange. Their market is good because of the good reputation for California oranges, built up by the organization of those who are willing to take all responsibility for defects if found on their fruit.

Answering the question, "On What Does the Future of Citriculture Depend," D. R. King of the Exchange answered:

"On the organization of the growers of the future."

If they are of the class which thinks in two years that they know more about marketing than those who spend all their time on that end, there will be pandemonium at both ends of the line. If we get a class of citrus growers who cannot look far enough ahead to sacrifice more or less of present personal interest in order to strengthen the organization, if they become jealous of the responsible heads, or unwilling to pay salary enough to get competent officers and agents, if they selfishly depend on the organization without supporting it, or if a majority of them are such, California oranges will get a black eye by reason of miscellaneous grading, defective fruit, poor packing, indiscriminate market distribution and competition. Our market will go to smash and citrus growing will be ruinous.

However, neither Mr. King and the united growers are fearing such a pessimistic future. Yet it will be well for us to consider who is to buy the subdivided orchards that will be thrown on the market about the time our immigrants arrive, and devise ways of educating them on the value of co-operative packing and marketing.

NAVELS SWEETER THAN FLORIDA ORANGES.

[Written for the PACIFIC RURAL PRESS.]

February 24 on the New York auction market was selected by the Florida grower for comparison of California navels and the Florida fruit. The southern oranges sold considerably higher and that, with other high prices received, gives occasion of great rejoicing to our contemporary.

He gave one of the reasons for the boom in Florida prices as the advertising campaign carried on the past three years by the Florida Citrus Exchange.

Another reason is the exceeding juiciness of the southern fruit which makes it good to eat with a spoon, but who carries a spoon around with him?

He didn't mention the fact that Florida boxes are larger than ours, too. But he did admit that he had sent to California for a box of navels for his own use, though the home grown ones tasted better afterwards.

Superior sweetness is claimed for the Florida oranges, but Prof. Wickson in "California Fruits" calls attention to the fact that this apparent sweetness is due to the lack of the health giving citric acid of which California navels contain 1.45% as compared with .95% in the Florida fruit.

Instead of California oranges being less sweet, they actually contain 9.99% of sugar as compared with 7.46%, the extra sweetness being concealed in the extra life and flavor of the navels.

THE GOLDEN PRUNE.

To the Editor: I see in your paper inquiry about the Golden prune. There is an orchard of Golden prunes in the San Ramon valley grown by C. J. Wood, of Danville: from him information can be had. I consider the Golden prune a very good prune.—SUBSCRIBER, Danville.

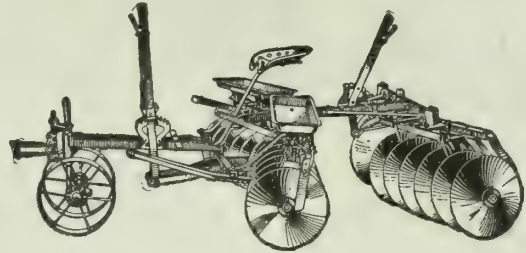
[Thank you. What do you think of it, Mr. Wood?—EDITOR.]

Geo. Kettelman of San Joaquin county lets alfalfa grow longer for

horses than for cow feed. As he expresses it, "Young green alfalfa hay makes milk, and is all right for cows. But it overworks the kidneys of a

horse. For this reason, and because the 'fat' of alfalfa is in the stalk, alfalfa for horses should be older when cut."

International Harvester Tillage Implements



THE I H C LINE GRAIN AND HAY MACHINES

Binders, Reapers
Headers, Mowers
Rakes, Stackers
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CORN MACHINES

Planters, Pickers
Binders, Cultivators
Earlage Cutters
Shellers, Shredders

TILLAGE

Combination,
Peg and Spring-Tooth,
and Disk Harrows

Cultivators

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WITH an International Harvester disk harrow the ground is so prepared that it stores away and holds the moisture from snow and early rains, liberating it to the roots of your growing crops at the time when they need it most.

International Harvester disk harrows are built to do this work as it should be done. They are strong enough to stand up under meadow slicing and tilling hard ground. The disks are of steel that keeps an edge. The bearings are as nearly dust and dirt proof as disk bearings can be built.

The full line includes every style of disk and smoothing harrow and the best line of drills and cultivators built. See the I H C local dealer for full information about the line, or send to us for catalogues.

"The Disk Harrow," a book which illustrates and explains the proper preparation of a seed bed, and gives examples of the value of disking—32 pages of valuable information—is yours for four cents to cover postage and packing. Write for it.

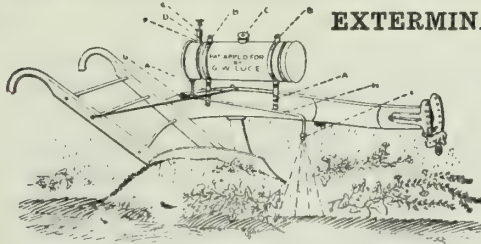
International Harvester Company of America

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Denver—Helena—Portland—Spokane—Salt Lake City—San Francisco

Champion Deering McCormick Milwaukee Osborne Plano

EXTERMINATE MORNING GLORY



Johnson Grass,
Bermuda Grass,
Insects and Germs that
dwell in the ground
with NONPAREIL
and the PRESTO
PLOW TANK

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, \$8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

The growing season and not the dormant season is the right time to do the work.

One large grower has purchased up to date this year \$2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphids, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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San Francisco, Cal.

LIME NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of Lime for the Soil.
"ACME" LUMP LIME has no equal for spraying and building purposes.
Send for Free Booklet and Prices.

PACIFIC LIME AND PLASTER CO.,

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HALF MILLION SEED BED STOCK FLORIDA SOUR ORANGES AND GRAPE FRUIT

Strong, thrifty one-year-old stock, eight inches and up.

Also fine line pedigreed stock of Eureka Lemon, Navels, Valencias, Marsh Seedless Grape Fruit and Mission Olives.

T. J. WALKER NURSERIES, San Fernando, Cal.
(Established 1895)

FRESH HORSE MANURE

As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

COW MANURE.

SHEEP MANURE.

PACIFIC MANURE AND FERTILIZER CO.,

429 DAVIS STREET, SAN FRANCISCO, CAL.

AGRICULTURAL REVIEW.

Citrus and Subtropical Fruits.

Permanently clear sweet orange juice may be made from packing-house culls and frozen oranges. Good culls rejected for irregularity in shape, poor color, wrong size, or injuries to the skin, yield 130 gallons per ton, of juice which retains the flavor of fresh oranges. Bulletin 244 just issued by the Experiment Station at Berkeley, tells the results of tests made for utilization of waste oranges.

F. L. Buck, an orange grower of Monterey county, after a seven months' trip East, reports the people still sore about California frozen oranges and prejudiced for Florida fruit.

W. E. Sprott, of the Tulare County Citrus Fruit Exchange, found a bad reputation for California oranges back East, due to shipment of green, poorly colored, and frosted stuff. The remedy is simple: concerted action in applying the knowledge we already have of picking, packing, and markets.

The Riverside Press was impressed "by the fact that so many of the prize-winning navel oranges at the San Bernardino show came from trees closely related to the original Washington navel trees."

In southern California the so-called "sucker" growth on orange trees is rubbed off two or three times each year.

Plenty of potash and phosphoric acid tends to make better texture, thinner skin, and earlier ripening oranges, according to A. L. Brooks, of Fresno county. Spraying is necessary because they have no scale or other pests.

Oranges in size from 80 to 324 per box are to be seen in the San Francisco wholesale markets being labeled from Fresno, Tulare, Ventura, San Diego, San Bernardino, and Riverside counties.

It is regrettable from the producers' standpoint that many orange wrappers and box labels do not mention the locality where the fruit is produced, but simply name them California fruits. Much good (or bad) advertising is lost in this way, reducing the effect of Chamber of Commerce efforts.

The pre-cooling season began at San Bernardino two weeks ago. Icing is now necessary along the southern lines.

Shippers of 237 cars of oranges sent to San Francisco in 1911 and 1912 recently received refund of overcharges made by the Santa Fe, of 1 to 3 cents per hundred pounds.

The Anaheim Fruit Association recently shipped a car of navels direct to London, which is almost entirely supplied from the Mediterranean.

About two-thirds of the 1914 fig crop of Fresno county has been contracted at 3½ to 3¾ cents. The rest of the growers are holding for 4 cents.

Avocado planting season is at hand. Young trees need protection from the sun. An orange climate is suitable.

Said to have the largest loquat ranch in the world, C. P. Laft, of Orange county, is marketing a 100-ton crop at 18 to 3 cents per pound from the first to the last of the season. Loquats are very poor shippers.

Ornamental Shrubs.

It was June-time last Saturday in Saratoga, where flowers and fun ruled out all commercial enterprise and

15,000 people picnicked on the green, breathing blossom-perfumed air, and the spirit expressed by Governor Johnson: "Today the world contains two distinct classes—those who live in California and those who wish they lived here."

The annual wildflower exhibit at the Santa Rosa library will be held this year in the week commencing April 6. Children and autoists and grown-ups heartily co-operate by special excursions through all parts of the county, even along the coast, to get wild flowers for the exhibit. The librarians and public-spirited helpers group and label all the flowers with their common and scientific names, and the whole town comes to enjoy them.

Los Banos country has this spring enjoyed the most lavish wild flower fields of the past quarter century.

Four hundred acres of wild poppies are reserved near Sacramento for use in the poppy campaign.

The floral festival bee has been pollenizing the receptive minds of men and women all over the State. Already Sacramento and Fresno are planning these most beautiful of all carnivals, which leave their cities immeasurably better than they were before.

Hanford, too, will hold its first rose festival in April.

San Jose boasted full-grown outdoor sweet peas March 11.

A 30-year-old elephant's ears bed, 76 feet across and 14 feet high, bearing leaves 4 feet across, may be seen this summer in San Jose.

Vacant lots in Santa Barbara are to bloom with geraniums and marguerites. For two weeks the leading florists make a 20% reduction on all flower plants for beautification of the city. The Boys' Agricultural Club of the high school has planted 10,000 geranium slips to be later transplanted to make the waste places beautiful.

Fresno has had a carnival of flower plant gifts, including 6000 violets, 12,000 chrysanthemums, 1000 cannas, 1000 hollyhocks, and thousands of iris, ivy, Shasta daisies, marigolds, lilies, carnations, smilax, Burbank's rainbow corn, ornamental vines and grasses, and other perennials. Elm trees costing \$400 just to plant have been set along Wishon avenue.

Anyone in Riverside who would plant rose bushes could get 5 or more for the asking from the beautification committee. Rose planting followed a clean-up campaign and will be followed by the planting of 10,000 chrysanthemums which the high school boys are now propagating.

Rocklin, Placer county, school children planted flowers and vegetables on Burbank's birthday, March 7. Prizes will be given later by the Women's Improvement Club.

The Gilroy city council and civic clubs are drafting an ordinance to prevent cutting down the shade trees.

The State highway through Merced county is to be planted to shade trees. A ten-year campaign of tree planting on all public roads was organized there early this month.

Great old trees are being moved to the Panama-Pacific Exposition grounds. Some 50-year-old Italian cypress trees, fifty feet tall, are being moved from San Jose and will appear as if originally planted on the grounds. The moving of these trees is under

Know Your Firm

You can only know the reliability of any spraying material by the reputation of the firm from which you purchase it.

Only the best chemical experts are employed by this company to see that every brand of spraying material contains the right chemicals to do the work. More than this, men are in the field who are examining orchard conditions and investigating what is necessary to eradicate all the evils which lessen the production of the orchard.

"Reliability" is our watchword.

We manufacture orchard and spraying materials to combat all kinds of insect troubles and fungus diseases.

There is a specific chemical to be used for every condition.

Send for special information blank RP.

Mr. S. W. Foster, former entomologist of the United States Department of Agriculture, will analyze your problems and tell you just exactly what you should do to eradicate fungus diseases and insect troubles. This service to you is absolutely free merely for the asking.

If you can't get our spraying materials from your dealer, notify us and we will see that you get them.

General Chemical Company of California

Royal Insurance Building
San Francisco

25 YEARS EXPERIENCE IS REPRESENTED IN A SELECT STOCK OF 50,000

CHOICE CLEAN CLASSY CITRUS TREES

All the leading varieties, buds taken from our own tested orchards. Send for Catalog and price list.

POLLARD BROS.
South Pasadena, Cal.

Buy and Plant Citrus Trees NOW

Prices of all nursery stock are right now at their lowest ebb. If you are figuring on planting a citrus grove—now is your opportunity to buy the healthiest, strongest, best pedigreed stock at low prices—thus getting started at reasonable cost.

Sit down and write to us for our best prices on what you wish to plant—or call and see us. We will quote you prices as low as anyone, quality of stock and responsibility considered.

FOR 25 YEARS WE HAVE BEEN GROWING CITRUS TREES EXCLUSIVELY.

—and it is reasonable to suppose that we know how to produce good stock. Proof of the fact is shown by the enormous business we have developed—not only in this state but all over the world. We are the largest Citrus Nurseries in the world and can supply you promptly with all the standard sorts of Oranges, Lemons and Pomelos, as well as many special varieties.

Our Handsomely Illustrated Booklet "Citrus Fruits"

try from seed to market—pruning, budding, cultivating, fertilizing, irrigating, etc.—will be sent to you upon receipt of price.

WRITE OR CALL AND SEE US FOR QUOTATIONS

San Dimas Citrus Nurseries
(INCORPORATED)

Established in 1890 by
R. M. Teague

SAN DIMAS California U. S. A.

Teague trees are started right, grown right, and shipped right.

direction of John McLaren, who made Golden Gate Park out of two square miles of sea sand and who now has charge of the Exposition landscaping.

Essence of rose is the chief export of Bulgaria to the United States. The average price of the 1910 crop was \$130 per pound.

W. S. Montgomery of San Joaquin county has planted walnut trees on both sides of the public highway in front of his property.

Deciduous Fruits.

Contracts for the 1914 crop of dried peaches and apricots have already been made in Fresno county at 4½ cents and 8 to 8¼ cents respectively.

The Fair Oaks ranch in San Luis Obispo county is setting out 100 acres to pears and almonds. G. F. Bell is planting 1100 apple trees to supple-

Eureka Lemons, Navels, Valencias

MY OFFERING OF EUREKA LEMONS FOR SPRING DELIVERY CONSISTS OF A BIG STOCK OF TREES MEASURING NOW ¾ TO 1 INCH. THIS IS THE FINEST, THIRTIEST STOCK IN CALIFORNIA. EVERY RID SELECTED FROM AN ORCHARD THAT PAYS OVER \$1250 PER ACRE A YEAR IN CROPS.

I am not in the nursery trust and will not "hold up" tree buyers on this stock. I offer them for delivery up to June 1, at 50 (fifty) cents per tree, f.o.b. Glendora, or 45 (forty-five) cents per tree if buyer does his own balling.

20,000 Washington Navels, ¾ to 1¼ inches, medium stock at 50 cents each, balled, f.o.b. Glendora, or 45 cents each if buyer does his own balling.

3000 select Valencias, ¾ up, at 50 cents balled or 45 cents loose root.

With all the information on any lots of citrus stock in my vicinity.

Any information on the subject of buying and planting trees, and truthfully furnished to buyers.

My references: Pasadena, or City National Bank, Pasadena; United States National Bank, Azusa; First National Bank, Glendora.

All my trees guaranteed to be as represented or money returned. Sample tree sent by express to any point in California upon receipt of \$1.25.

I do not issue any expensive catalogues full of "bunk." I save this expense and give the buyer the advantage of it.

No orders filled for less than 100 trees. Address

FRED C. SCHIFFMAN
Big 4 Ranch, Glendora, Cal.

SOIL ANALYSIS properly made and interpreted is steadily growing in favor with the most advanced farmers and fruit growers because of the good results following its use. Send for proofs.

R. R. SNOWDEN,

Chemist and Soil Engineer,
320 Stimson Block, Los Angeles, Cal.
Phones: Main 622 and A-4017.

SEEDS, PLANTS AND TREES.

Don't fail to write for my new free Catalogue and Garden Calendar specially prepared for California. It tells when and how to plant all kinds of Vegetable and Flower seeds, trees, plants, together with descriptions of the most desirable sorts.

THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

ment the same number planted last year. The county has about 50,000 apple trees, 22,000 apricots, 12,000 peaches and nectarines, 6000 pears, and 23,000 plums and prunes.

Mendocino county claims the largest apple orchard under one management in the State—175 acres. Over 4000 new apple trees are being set out in the county.

In Butte county 60 acres of cling peaches and prunes were set out on one ranch, 40 acres on another, 40 acres to Mission olives on another and 24 acres of pomegranates at Terra Buena.

Apricots were hurt badly last week at Winters and Vacaville, due, it is thought, to heavy land fogs followed by hot weather.

A tragedy in cherries at Vaca valley has occurred, where leaves of trees three to twenty years old suddenly turned yellow and dropped after the trees had blossomed heavily. This sometimes occurs from lack of water the previous season or from too much water standing about the roots.

So far as can be told now, according to J. W. Jeffrey, secretary of the Cured Fruit Exchange, apricots will be a 40% crop in all California, though fair in Riverside and Ventura counties. Pears will be heavy, almonds and peaches normal. Pear thrips have not shown up bad this season. Those trees on unirrigated land are doing best which were heavily pruned to meet the dry condition of their roots the past two years. Five hundred acres of new apricots will come into bearing per year for the next few years in the neighborhood of Hemet, Riverside county.

Cling peaches and apricots seemed favorites for planting this spring in Tulare county. R. W. Morgan planted 1500 trees of Tilton's.

A 50-acre almond orchard is to be planted in Sacramento county by Miller and Robinson.

San Joaquin county almonds and peaches have set extra heavy.

Directors of the new California Green Fruit Association, formed to handle table grapes and managed at present by James Madison of the Associated Raisin Co., were appointed a week ago.

The Santa Clara Cherry Carnival is to take place the first week in June and this year is to be distinctively a home affair as against the circus and sideshow features of last year.

Troubles.

Dinuba vineyards suffer from night depredations of cut worms. Green fruit shipping from this section will be discouraged this year. Cut worms are hurting the vines and peach trees of Fresno county, too. H. E. Townsend has for years kept these pests from his vines by spraying them with a warm solution of pine tar and water.

For the rose aphid, which is troubling Santa and Colusa counties among others, a spray of two-thirds teaspoonful of tobacco solution to a pint of warm water is recommended. Earl Morris says the best thing is to wash them off with a strong force of water.

Government men are killing squirrels in the San Joaquin country.

A ten-dollar fine for shooting meadow larks was imposed at a Sonoma county court session held in an auto where the miscreant was caught.

A cholera germ is being cultivated in Paris to give to the locusts when

they bother the farmers.

H. S. Rawcett brought back from Florida a fungus which has successfully combated purple scale of citrus trees.

WHALE-OIL SOAP REPELS RABBITS.

To the Editor: Years ago I used for my orchard in Berkeley, whale-oil soap. I also furnished, but am

not sure it was used, whale oil to rub on street trees to discourage horses from gnawing them. My opinion is that no animal that gnaws bark would take the second taste of whale oil. I once ate a piece of whale flesh that was a bit rancid and the taste was villainous.—READER, San Lorenzo.

[We have no doubt it will do it, but other bad-smelling things are cheaper and probably just as effective. —EDITOR.]

"Bean" Centrifugal Pumps



The Test of the Pump is the Pumping!

When you connect up the pump and turn on the power—that's when the real test comes! And that's when the owner of a Bean begins to realize that he has made the right selection. The Bean (known for many years as the Caton) is the most efficient and satisfactory centrifugal pump on the market. Among its many distinctive advantages is the Bean Water-sealed Stuffing Box which practically ends stuffing box troubles. It insures an absolutely air-tight seal. The bean is automatically balanced regardless of water level; has ring oiling bearings; and suction and discharge can be turned to any desired angle.

Send for Catalogue 28-B: It illustrates and describes the entire Bean line of horizontal and vertical pumps and gives much helpful pumping information.

BEAN SPRAY PUMP COMPANY

211 West Julian Street

SAN JOSE, CALIFORNIA



One of the many styles and sizes of Fruit Trucks I manufacture. Sixteen years of experience has taught me how to make trucks that will stand the hard knocks and that will last. For prices and further particulars, address

BROEDEL ORCHARD TRUCK CO.,
552-556 South First St., San Jose, Cal.



FOR YOUNG Orange Trees

USE OUR MOCOCO NURSERY STOCK FERTILIZER.

It will make the trees strong and vigorous, and bear abundant first class fruit in after years.

Mountain Copper Co., Ltd.

332 Pine Street

San Francisco, Cal.

SEEDS

Get our new 1914 Catalog and "HINTS ON GARDENING"—FREE. A postcard brings them

Florida Sour Orange Seed

MORRIS & SNOW SEED CO., 425 S. Main Street, Los Angeles

Ask for Prices

With the Live Stock Men.

TROUBLES.

Los Gatos valley, 7 miles wide and 15 miles long, is patrolled by a mounted quarantine officer to enforce the order of the State Board of Health requiring all dogs to be muzzled or kept inside. All other animals will be watched for rabies, which has killed several of various kinds.

The most poisonous plants on the national forests are larkspur, loco weed, death camas, and water hemlock. Larkspur does most harm because so widely distributed. It does not hurt sheep, and horses do not often eat it, but cattle are seriously affected. Experiments by the Department of Agriculture have developed a remedy successful in 96% of cases, and demonstrations of its application will be given on several national forests this summer. The officers will be furnished with a standard equipment of syringes and medicines, and subcutaneous injections will be used of Physostigmin salicylate, 1 grain; pilocarpin hydrochlorid, 2 grains; strychnine sulphate, 1/2 grain, on animals weighing 500 to 600 pounds, doubling the dose for large steers and cows weighing 1000 pounds or more.

A. Bronge, in the Temperance colony of Fresno county, lost by fire a new \$1600 barn, nine head of stock, several tons of hay, etc.

Kings county Live Stock Inspector Griffith found last month only two cases of hog cholera and two of black-leg. Stock in general is healthy.

DAIRYING.

Fine flavored milk is produced from oats, corn, alfalfa hay, cottonseed meal, linseed meal, bran, gluten, and other good feeds for dairy cows when properly fed in reasonable amounts, but there is no substantial evidence that any one of them is superior to any of the others in this respect, according to tests recently made by the U. S. Department of Agriculture.

Subscriptions of \$5500 for a creamery in Madera county have been made. Canvass of resources shows 10,000 acres of alfalfa in the county, besides that of Miller & Lux.

Prof. W. A. Barr of the Oregon Agricultural College says to his dairy club boys: "The dairy cow should have eyes big enough to see all that she ought to eat; jaws strong enough to eat all she sees; a stomach large and hearty enough to digest all she eats; a circulatory system vigorous enough to carry all she digests to the body, especially all surplus to the milk glands; and the milk organs should be large enough to secrete and store all the milk in this surplus. Since it takes a great deal of air to purify such active blood, she should have large nostrils and big lungs."

Sweet cream butter, scoring 94.7 to 95 points, stored in tins at zero or below since the summer of 1913 in 219 five-pound samples taken from butter made for the navy, was scored again in February and showed a maximum loss of 2.9 points as the average for the creamery which made the lowest scoring butter.

April butter-fat will go at an average of 20 cents per pound in southern California, according to E. De Garmo of the Los Angeles Creamery Co. He thinks the New Zealand butter will keep the price below 20 cents this summer.

Fresno county dairymen received 32

cents average for the 239,454 pounds of February butter-fat aggregating \$76,000.

The Visalia Co-operative Creamery paid nearly \$21,000 for 328,500 pounds of cream from which was made 86,500 pounds of butter.

Scott valley, Siskiyou county, is better for dairying than for beef raising, according to Etna high school debaters.

R. F. Guerin of Tulare recently received from Hampshire, Illinois, the year-old bull Judge Hengerveld de Kol 5th. His dam gave 28.54 pounds of butter in 7 days and 117.04 in 30 days.

The Rio Bonito Orchard Co. of Butte county, sold last week at auction 120 dairy cows and two bulls.

The Stanislaus Cow Testing Association held its annual meeting on March 23.

A committee of three, appointed to learn what basis there is at Madera for a co-operative creamery, reports that alfalfa raisers are deciding that it is better to feed alfalfa than to sell it. This is likely to be true over most of the State.

Four Holsteins recently completed yearly records of over 900 pounds fat. Three are owned in Ohio and one in Virginia.

HORSES.

A carload of Modoc county horses were recently shipped for summer pasture near Oroville.

BEEF CATTLE.

Five of the nine large slaughter and beef packing houses of Buenos Ayres, Argentina, are owned or operated by Chicago packers.

The Cholame ranch of San Luis Obispo county recently bought 1000 Mexican cattle.

Ventura county ranges need rain in spite of the wet winter. A couple of good showers are all that is needed.

Sacramento meat inspectors condemned nine tons of meat in February and eight tons in January.

Porterville district expects to ship \$300,000 worth of cattle in May. Forage is fine.

A mountain lion has been killing a few cattle on the Witherall ranch in Siskiyou county.

Nineteen cars of cattle were brought to Nevada county from Nevada State last week.

The champion Short-horn bull at the live stock show of Buenos Ayres sold for about \$35,000.

SHEEP.

All sheep must be dipped before entering national forests and as a result scabbies has been practically stamped out there.

Shearing of over 25,000 sheep commenced last week at Jungo, Humboldt county, Nevada. Thirty shearers got busy. Shearing began this week at Winnemucca.

The Williams sheep will stop their northward journey to summer range early in April in Lander county for shearing.

Solano county is advertising a man who milks 1000 ewes, making 350 pounds of cheese daily from their milk.

SWINE.

March hogs in Chicago have been the highest since August.

The Nevada State Quarantine Board has recently had a man inoculating

hogs about Carson City against cholera which was threatening to become serious.

Pacific Northwesters are advised by the Department of Agriculture to raise their own pork by letting it harvest grain, grass, and alfalfa for itself.

Light receipts of cattle and hogs improved the prices last week at the Portland stock yards. Steers sold at \$7.75 to \$8.25; cows, \$5.75 to \$7; bulls, \$5.50 to \$6; calves, \$4; hogs, up to \$8.85. Sheep business was active, with highest prices of \$7 for wool lambs, \$6 for wethers and \$5 for ewes.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2 1/2c per word.

SWINE.

THOROUGHBRED JERSEY-DUROC HOGS—Most prolific, hardest and safest hogs to breed. Weanlings, \$10 to \$15; bred gilts, \$25 to \$60. D. E. Price, Ellsworth, San Joaquin Co., Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State \$30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, \$15.00 up. Ed E. Johnson, Turlock, Cal.

THOROUGHBRED BERKSHIRES—Boars of all ages. Ricconi Bros., Mountain View, Cal.

TAMWORTHS. The finest bacon hog All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Heary Farmington.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe. Stockton, Cal.

HORSES AND MULES.

MULES—For sale or trade for draft horses. 60 head of first-class mules from three to eight years old, weighing from 1100 to 1400 pounds. Mules at Linden Stock Farm. 15 miles north-east of Stockton. Address Linden Stock Farm, Linden, or W. H. Hord, 704 Market St., San Francisco.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of Jacks at weaning. J. E. Dickinson. Fresno.

REGISTERED JACK No. 4157 for sale or trade for team of 1300 or 1400-lb. 4 to 5-year-old mules. W. F. Cummings, Healdsburg, Cal.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

FOR SALE—50 very high-bred grade Holstein heifers, from 18 to 24 months old; all bred to purebred sire. E. J. WELDON, Box 962, Sacramento.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Millitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS—Gay Lad 6th heads herd O. Harris & Sons, Harris, Mo.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

9 BULLS 9

REGISTERED SHORTHORNS

9 to 13 months old. In fine condition.

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Perkins, California

FOR SALE

4 Brood Mares

3 bred to a Jack—Price \$175 each
1 bred to a Horse—Price \$150

ALL IN FOAL
Average weight 1400 lbs.
C. M. TURNER, Box 271, Suisun, Cal.

The Efficiency of Good Horses.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Most of the fine live stock other than horses, in this State are the result of breeding by farmers who have started in a small way and gradually increased their herds or flocks, both in quality and quantity.

Oftentimes, it is true, the results have not been satisfactory, but we have examples which show that animals of high type are a possibility here, with intelligent handling and care.

For some unaccountable reason the breeding of purebred horses has never been so extensively engaged in, as of cattle sheep or hogs, yet there is no other animal that fitted into the breeding scheme on all farms, better than the draft horse; for while the quantity and quality are being secured the farmer is able to utilize the farm power that they create, in a profitable manner.

Perhaps one reason that many have not attempted the breeding of purebred horses has been the prevailing notion that it required a large capital to enter the business in a large way, and only one or two mares to start with would mean slow and tedious progress.

RAPID INCREASE FROM ONE MARE.—That the latter view is not correct is shown in the experience of the Polytechnical College, at San Luis Obispo, where great headway has been made with conditions no more favorable than the average farmer of today has.

About nine years ago there were purchased for this school a registered Percheron mare, a registered Clydesdale mare, and a registered stallion. Care was taken, in selecting these animals, as to their soundness and health, but the Clydesdale more unfortunately died with her first foal. This left the institution with the one Percheron mare, as a foundation, but she proved to be a good breeder and fortunately a large percentage of her foals were mares.

At times since then, it has been necessary to miss a season occasionally, with some of the mares, as no suitable stallion was at hand, but with an ever increasing bunch of brood mares it has yearly become more easy to multiply the number and now there are enough of these registered mares to do all of the farm work at the school; and there are on hand a good-sized bunch of mare colts.

The first cost of this undertaking, was a trifle more than it would have been if grade mares were purchased, yet the results have been far in excess of what could have been expected with ordinary stock, for even if the difference in selling purebred were not considered, the relative efficiency for the farm power is greatly enhanced with the good stock.

The illustration seems valuable, inasmuch as at this time, where demand for horse flesh in the market seems to be rather dull, the farmer himself is using practically as many horses as ever, and for that reason it would seem to be good business to raise only the very best.

When beef, pork, or dairy products are low in price the farmer does not, as a rule, start breeding good stock, but on the contrary, raises his quality standards, in order to exact the most from the market; and there does

not seem to be any logical reason why we should not consider the horse in the same light, especially the heavy horse breeds.

TELLING THE AGE OF A SHEEP.

Although sheep-raising has not in the past been given much consideration by the smaller farmer, it is the belief of a great many that the time is not far distant when the average California farmer will keep at least a few sheep in connection with other stock.

In many of the Eastern States practically all of the sheep are raised on the smaller farms, and with the cutting up of large areas of valley land formerly used as winter feeding places, it will not be long before this State will be almost entirely dependent upon the alfalfa and grain farmer for its mutton.

In many ways this is a good thing, for there is no other farm animal that can be more economically raised or one that adds more value to the land in the way of fertilizer. Since age has so much to do with the value of a sheep, it becomes important to the farmer to be able to tell the age of sheep. This can be done more or less accurately by the examination of their teeth. It is chiefly by the four pairs of incisors on the lower front jaw that the age of sheep can be told, although the teeth vary somewhat in shape and coloring with time. Below is given a description of the teeth of sheep at different ages.

The lamb: By the time a lamb is six weeks old, it usually has the four sets of incisors on the lower jaw, mentioned above. These teeth are white and smooth in the lamb and in this respect differ from the more corrugated, darker teeth of the mature sheep. They correspond to the milk or "baby" teeth in the human.

The yearling: At ten to fourteen months of age, the central pair of small incisors will have been replaced by a pair of large incisors nearly twice as wide and long as the remaining pairs of incisors.

The two-year-old stage is marked by the coming of the second pair of large incisors. When the lamb is three years old, it will have three pairs of large incisors and but a single pair of small ones.

The four-year-old sheep has a full set of large incisors. The outer ones are never so large as the center ones, but they are considerably larger than the first set of small incisors.

After the sheep is five years old it is often difficult to tell its age exactly. A difference in the shape and size of the teeth is about the only standard. The teeth get longer and narrower with age. They begin at five years of age to resemble shoe pegs. Of course, where sheep are kept on such short pasture that their teeth come in contact with considerable sand, this keeps their teeth worn short, even in old age, yet a person who is at all experienced in handling sheep can tell by the general appearances of wear and tear on the teeth, about how old the sheep is. When the teeth get very long and narrow, or when they become broken down in any way, the sheep has passed its years of usefulness either as a breeder or a feeder.

JOY-RIDING ON PIGS.

The story comes from Spokane that the returns from three pigs bought a year ago are giving J. K. Smawley, a rancher near Pullman, a trip around the entire United States during the winter months. Mr. Smawley says that with these three pigs he started his herd. At the Pullman hog show last year he won eight first prizes with pigs from his herd. Later he went to Lewiston and carried off six blue ribbons. In addition he sold 15 young pigs at \$35 each, and with the proceeds of that sale alone started on his vacation trip.

COWS WHICH ARE QUITTERS.

To the Editor: Is there anything to increase supply of milk in cows? Do some cows quit having calves after having two? If this is so, is

there a cure in a young four-year-old?—SUBSCRIBER, Lemoore.

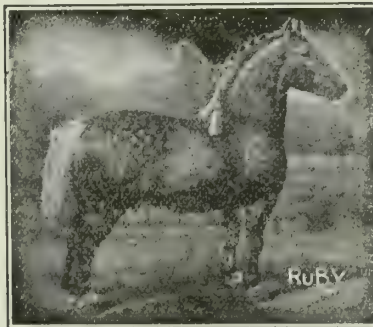
[If a cow is below her normal yield, or milk yield for which she has natural capacity, and is in good health, her yield can be increased by better feeding with foods rich in protein—as alfalfa is, for instance. Some cows quit having calves at various ages and for various reasons: so far as we know, there is no prevalence of the two-calf limit. There are so many things involved in the sterility of animals that consideration of the individual case is necessary. If you have a graduate veterinarian in your neighborhood, he can explain this matter to you.—EDITOR.]

San Joaquin county alfalfa growers cut when the new growth from the crown is just high enough so it will not be clipped by the mower. If clipped, it shortens the next crop.

A. C. RUBY, Portland, Ore.

C. W. BOWERS, Davis.

Ruby & Bowers



The Largest Horse Importers on the Pacific Coast.

Of sixty-eight horses imported, we have only four left at our Davis barns. Will have another carload in a few days. Mr. Ruby leaves for Europe in April and will make another shipment direct to San Francisco.

Our Stallions at from \$1000 up can't be beat anywhere.

We furnish breeding books at 75c. each.

RUBY & BOWERS, Davis, Cal.

References: American Natl. Bank, Pendleton, Ore. Merchants Natl. Bank, Portland, Ore. Bank of Yolo, Davis, Cal.

America's Leading Horse Importers PERCHERONS



"Our recent importation arrived at our Oakland stables March 1st. This shipment comprises the best lot of stallions ever shipped to the Pacific Coast. Every horse in the lot is sound, young, stylish and of the best conformation. At the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons; two Second Prize ribbons, and other honors."

If you want the BEST let us hear from you."

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Salvador Stock Farm Shire Horses



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I will sell you a better horse for half the money.

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For Sale—SHIRE STALLIONS ranging from two years up. Also MARES in foal. Breeding and quality unsurpassed. Prices right and inspection invited. Correspondence given prompt attention.

Address HARRY CLARK, Burlingame, Cal., or DR. J. B. DALZIEL, 530 Fulton St., San Francisco, Cal.

Selling High Testing Milk.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The prevailing notion that it does not pay to sell a high testing milk to the city trade seems to be upset by the experience of F. O. Frazier, near

Of the 50 cows being milked at this time, about half are pure-bred Jerseys, the balance being grade Jerseys and Holsteins, the average test of the herd being around 4.8% fat. All of the product from this dairy is sold as whole milk and instead of such high testing milk being a drawback it has proved a profitable drawing card. Two hospitals take all of the morning milk at 35 cents a gallon and the evening milk is retailed by wagon in Covina.

The pure-bred herd was started two years ago when some cows were purchased in this State and the herd was later increased from the East. The herd sire is Mary Maiden's Conquest, being a fine individual and, from the

Although the well bred cows have a great deal to do in the ultimate returns, their care and feed as well as sanitary surroundings have much to do with the good prices realized for the product.

AND ENGINEER, THE BUILDING has a capacity of 50 cows, having cement floors, gutters, and mangers. The sides are open from the floor to the roof with the exception of a few one by six boards which are nailed to the roof supports and act as a fence to keep the cows inside. One end of the barn is enclosed and a space partitioned off for mill feeds and a shower bath, where the milkers may bathe if they desire. A sink with hot and cold water near that end of the barn allows the milkers to wash as often as desired. The cost of the barn was very reasonable as the roof and floor were the principal expense and with three sides open the ventilation is all that could be wished.

INSIDE FEEDING.—The only feed used in this barn is bran and cottonseed meal, the balance of the feeding being done under another roof. This other building also has stanchions and a cement floor but no gutters. The mangers are made of wood and a large enough space is left in the center to drive a team through. At one end of this feeding shed two silos have been built, one on each side of the driveway, so that all of the silage is easily hauled in a small cart to the mangers and is convenient to handle in wet weather. With the exception of two and a half pounds of bran and one of cottonseed meal fed twice a day in the milking barn, everything is fed in this shed, the system being to turn the cows into the feeding shed after the morning milking. They are at once given alfalfa hay. At noon they are fed fresh cut green alfalfa, then at the night or afternoon milking more mill feed, and after that 25 pounds of corn silage. Most of that time they have been under roofs but at night they are allowed to be in the corrals. This may seem to require a lot of work but it has been found profitable. With the variety of feeds, the ration is considered well balanced, and by feeding green cut alfalfa the results are the same as with pasturing, and all danger of bloat is avoided.

HANDLING THE MILK.—All milk is weighed in the milk house and tests are made every two weeks.

The milk house is well ventilated and by having double walls keeps cool even in the hottest weather. Hot water and steam are piped into this milk house insuring perfect sanitation of the utensils.

One hundred acres of the ranch are seeded to alfalfa and it is the intention to increase the herd to about twice its present size, as the market for the whole milk from this place is rapidly growing. Barns could be

made to accommodate twice the number now kept.

Besides the dairy, Mr. Frazier maintains about 1500 well bred chickens which he finds work in very profitably with the rest of the stock.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



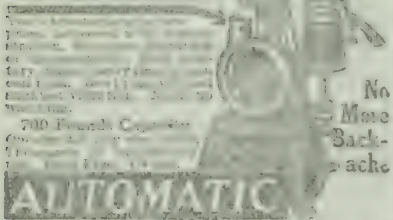
Has Imitators But No Competitors.

A Horse, strong and Positive Cure for Cuts, Scalds, Burns, Sprains, Bruises, Puffs, and all lameness from Spavin, Wind, and other bony tumors. Cures all skin diseases or Parasites, Itches, and all other ailments. Has won all the highest honors from the American Horse Show.

As a Horseman Remedy for Rheumatism, Sprains, Swellings, etc., it is the best. Cures all kinds of Cuts, Burns, and all other ailments. Has won all the highest honors from the American Horse Show. Testimonials, etc. Address: The L. A. Lawrence Co., San Francisco, Cal.

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REGISTERED JACKS

12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and meat every way, well mated as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young males, horses or land.

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Alpha Engines start on the magneto without turning them over, and they require no cranking.

Alpha Engines are low fuel consumers, with high efficiency, and are the highest grade, most reliable gasoline engine that money can buy.

Alpha Engines are especially adapted for irrigation plants and they have that ability to stay on the job 365 days in the year and 24 hours per day.

Alpha Engines can be furnished with special carburetor for using low grade distillate or tops.

Alpha Engines were awarded the gold medal at the California State Fair last season and were in competition with about thirty-six other engines.

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WE MANUFACTURE THE IDEAL GREEN FEED SILO



San Ramon Shropshire Flock Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

CALIFORNIA STATE FAIR, SACRAMENTO—First, four seconds, champion ram and ewe. OREGON STATE FAIR, SALEM—Two ewes, one first, one second.

INTER-STATE FAIR, SPOKANE, WASHINGTON—

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

Don't Forget that Big Consignment Sale of Registered Jerseys on April 2

On the G. O. Hillier Farm, MODESTO, CAL. Remember they are all sold under a WRITTEN GUARANTEE. BE THERE. HAVE YOU A CATALOG?

G. O. HILLIER, Sales Manager, Modesto, Cal.

B. A. RHODES, Auctioneer, Los Angeles, Cal., assisted by J. H. CORLEY of Modesto.

BE THERE—THEY ARE ALL GUARANTEED—BE THERE

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts.

San Francisco

Garbage Hogs and Cholera Serum.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

There may be more attractive places to visit for one with a keen sense of smelling than the garbage hog farms near Los Angeles, but when a person leaves he has the satisfaction of knowing that he has visited the largest hog ranch in California.

By largest we do not mean in the number of acres, for comparatively the amount of ground used is very small; but the number of hogs more than makes up the small acreage. This number varies from 25,000 to 27,000 head, according somewhat to

the season, for during the winter months the refuse in the city is not nearly so much as during the summer, when more vegetables and fruit are used. The reason for this large enterprise in hogs is that the city of Los Angeles has been unable profitably to dispose of garbage in any other way than through hogs. While this way helps to pay the cost of city collection, it is disliked by residents in the vicinity of the hog ranch, on account of the odors. For that reason the company which contracts from the city is always working with a great deal of uncertainty as to the future.

HANDLING THE GARBAGE.—The city collects and delivers the refuse to the railroad. The contracting company pays the freight to the ranch, located near Baldwin Park on the gravelly river bottom lands. They themselves keep 4000 to 5000 head, and the balance are kept by tenants, mostly Japanese, who buy the garbage at \$1.25 per ton and furnish their own houses, fences, and hogs. These tenants keep from 300 to 1000 head, according to their capital and experience. Unlike most places where garbage is fed in a small way, no cooking is done here, as it would require much time and expense to cook the 175 or 200-ton daily consumption. The cars are run in onto a siding at the ranch, the garbage is hauled in wagons to the feeding floors, and shoveled out. Much of this contains cans, bottles, and other non-edible things, which are cleaned up every other day and hauled to a distant field, where, when dry, they are burnt.

REFRESHING THE HERD. Each tenant has his own brood pens, where the brood sows are given shelter and a feeding floor, also drinking water. Pure-bred Duroc-Jersey and Tamworth boars are used by the better breeders, as it has been found that those breeds do better under the conditions. The amount of feed given to the sows varies, the ration before farrowing being light, and afterward more.

When the pigs are five or six weeks old they are vaccinated against cholera, and then kept penned up for a week or ten days, after which they are put into large feeding pens. From that time until they are 14 or 15 months old, they receive all the garbage they will eat, at which time they weigh 200 to 250 pounds.

The brood sows are usually kept about two years, if they are prolific breeders; if not, they are put in the fattening pens at once.

Feeding in large numbers this way, it is hard to determine the amount consumed by the different sized hogs, but it usually takes about eight tons daily for 1000 head.

We were told that with the uncertain supply conditions, no one felt justified in spending money for more modern equipment, and for that reason much of the labor, sickness, and odor are unnecessary.

Most of the butchers cut one-half cent a pound for these hogs, but with that reduction there seems to be a good margin of profit, since the hog cholera serum has practically eliminated sickness.

SERUM PREVENTS CHOLERA TROUBLES.—This garbage hog-raising has been a risky business until the past two years, when vaccinating started. Before that time the best of managers lost 20 per cent through the cholera,

and many lost their entire herds; but this has been cut down until only one or two per cent losses are now experienced.

As we said at first, it is not an inspiring sight for one with a delicate

smelling apparatus, but it seems to prove pretty conclusively that the hog cholera serum is capable of doing much in saving the hog raiser money, and for that, if for no other reason, we believe this smelly space is warranted.

You Should Know About Fairmead Lands

Where alfalfa produces eight tons per acre per year.
Where olives, figs, peaches, etc., pay big.
Unlimited water. Rich, easy-to-work soil.
Good neighbors and schools.
Splendid markets.
19,000 acres now selling fast in 10-20-40-acre tracts.
Bottom prices—easy terms.
Send now for free booklet, "Fairmead for Farmers".

CO-OPERATIVE LAND & TRUST CO., Owners,
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NO PIT

is required with the

Krogh Deep Well Turbine Pumps

For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self-aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.



Krogh Manufacturing Company

SAN FRANCISCO, CAL.
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LOS ANGELES, CAL.

Corn & Cotton Planters

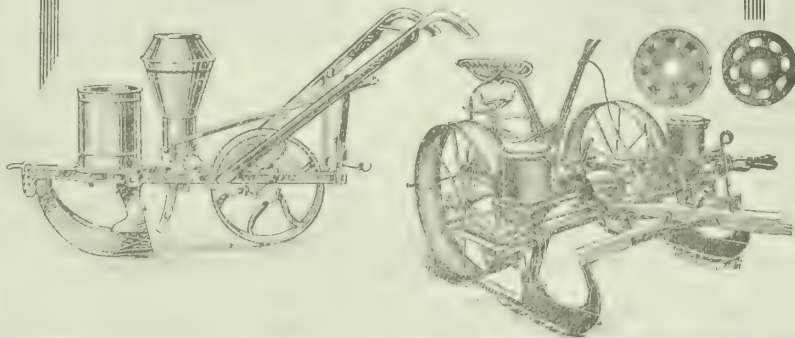
We illustrate below our single and double team corn and cotton planters—adapted to field and fodder corn, cotton, peas, small varieties of beans, etc. Made in 1—2 and 4 row sizes. The 2-row plants rows from 28 to 48 in. apart—Automatic or hand drop and check rows if desired. The 4-row plants rows from 24 to 30 in. apart—automatic or hand drop.

These planters are of the strongest frame construction—built to last and do good work.

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Established 1886
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Water! Water!! Irrigation! Irrigation!!

Don't worry about a dry season. Insure against a failure of crops by boring wells, thereby securing a bountiful supply of pure water.

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WELL CASING

Double or Single, Black or Red Steel and Galvanized.

50 years' experience; employment of skilled mechanics, operating modern machinery, using best quality of steel specially rolled for casing, enables them to produce a superior quality, to meet the requirements of well-borers who pronounce Montague's Casing the Best.

Montague casing put in wells in Santa Clara County 50 years ago giving good service today.

557 Market St., San Francisco



Cheap But Sanitary Dairy Buildings.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The added interest in dairying, which is being felt in all alfalfa sections this year due to the prospective low price of hay, will mean the erection of many milking barns.

As many of these will be constructed with an idea of temporary quarters at a small expense, the sanitary features will probably, often be lost sight of in the belief that sanitary buildings cost more money.

CLEAN CHEAP COW BARN.—That this is not always true, was recently seen on one of the dairy ranches, owned by Dr. T. E. Hull, of Tipton, who leases his land to tenants. Not caring to invest heavily in buildings, he planned a barn large enough for 60 cows, with good ventilation and drainage at an expense of about \$400. The cement floor is 20 feet wide and 90 feet long, two gutters four inches deep, back of the cows, being used for drainage. The entire floor has a slope of one foot from end to end. It cost \$108 for 135 sacks of cement, \$36 for 12 days labor of mixing and laying floor, and \$24 for the work of two men and a team, for three days in hauling the sand, or a total of \$168 for the floor. This cost would of course vary, according to the distance one hauled his gravel or sand.

Wooden stanchions and mangers are used, being located along the outside edges of the floor, so that the cattle face the outsides of the building. These form all of the outside wall, that there is, and the feed is protected from rains by the projecting roof, which has a two-foot cornice. The roof, which is made of 2x4 rafters three feet apart and covered with shakes laid 16 inches to the weather, is supported by 6x6 posts, at the sides, with bridgework through the centre of the building, for support.

If one preferred to have the mangers in the center, he could, by making the floor somewhat wider, accomplish it with very little extra cost.

CLEAN CHEAP MILK HOUSE.—The milk house was planned with the same idea of economy, being the lower part of the tank house.

The room is ten feet square and eight feet high, the lower part being enclosed with inch boards and battens, to a height of about five feet. From there to the ceiling, an opening was left which is screened in for fly protection. This building also has a ce-

ment floor, well drained and supplied with water, as is the barn, from a galvanized tank on top. The sides are left open around the tank, a roof protecting it from the sun.

A unique way of supplying the water for this tank is by pipe direct from the irrigating plant, which is run by electricity. A valve from the reservoir pipe line is closed and one on the line to the tank opened, where water is needed, and in this way the entire flow of the pump may be turned into the tank, which can be filled in a few minutes.

Although not equipped with the most modern devices, these buildings answer the purpose admirably, and the cost is much lower than ordinarily seen, where not nearly so sanitary conditions prevail.

CHEAP STEAM FOR THE DAIRY.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The expense of installation often keeps dairymen from having steam and hot water for sterilizing milk cans, pails and separator parts, but the old saying that "necessity is the mother of invention," was recently seen on a dairy where both steam and hot water are obtained, at a very small cost for equipment.

As the milk from this plant is sold to the city trade, it requires considerable hot water and steam, but instead of an expensive boiler plant the following scheme was worked out.

A galvanized iron tank, of about 300 gallons capacity, was set on top of a platform, the bottom being about eight feet from the ground. Enclosed in a small shed, next to this tank, is the heating plant which is nothing more than a fire box made of brick, with two coils of pipe wound around it inside. These pipes are supplied with cold water, from the main supply that is piped all over the dairy. The coils are arranged in much the same manner as those used in an ordinary cook stove. A valve, outside of the brick, allows the operator an opportunity of diminishing, or increasing the intake as desired. The water from the coils goes in another pipe to the tank outside, or may be turned through a valve into the hot water pipe, to the milk house. In case steam is wanted, as it is every day for sterilizing, the amount of cold water is cut down, so that the flow is made into steam as fast as it hits the hot pipes and is turned through the hot water pipe to the milk house.

Crude oil is used for fuel, the supply tank being elevated, so that it gravitates to the burner, which is nothing more than commonly used in heating stoves. The entire plant cost about \$75 counting labor and material, but aside from its cheapness it has other advantages. In the first place, it takes only ten minutes after lighting to have boiling water, as there is scarcely any surface to warm up.

It is absolutely safe from explosion, as there is never more than two or three pounds of steam pressure and anyone can operate it. Lastly it is cheap to run, as the amount of crude oil used is very small.

In this case it is also utilized for toilet purposes, a sink and shower

both having hot water piped from the supply tank, which after heating for the morning work, stays warm all day.

Although a home made device, this little plant could be put into profitable use on large numbers of our dairies with a very small cost.

An oil fire on steam coils supplied with little enough water to turn it all to steam—perhaps there is no valve—otherwise there would be danger. Is it not so?

INFECTION IN UDDER WOUND.

To the Editor: Please give me a treatment for a cow that was kicked on the udder by a horse about three months ago. I doctored it, but was unable to do her any good, and two

of her teats sluiced off. I want to heal her up so that I can fatten her up for beef. Her udder is hard. It broke in one place, but seemed to have healed over. At present it is not running any corruption or matter and the teats look like they had been simply cut off. I dried her up and thought maybe that was one cause of her udder being in so bad a condition.—C. B. H., Butte City, Glen county.

[Infection from not properly caring for it in time. I would advise the use of the following: Oil cedar, 1 oz. Camphorated oil, 11 ozs. Sub galate bismuth, ½ oz. Mix and apply twice daily after washing with 5% solution Phenol.—Dr. E. J. CREELY, San Francisco Veterinary College.]

Lima beans are the best unirrigated crop in a large part of Orange county.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, Cal.

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SHORT HORN CATTLE SHROPSHIRE AND MERINO SHEEP

ATTENTION, SHEEPMEN

My pure-bred, range-raised yearling Shropshire and Merino rams will be out of mountains about April 15 and ready for inspection at my place.

Shropshires sired by rams imported by me from England in 1911.

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

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Offers some choice Poland-China gilts, both bred and open. All full sisters to one a breeder offered me \$75 for at 12 months old. \$10 up.

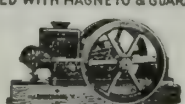
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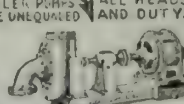
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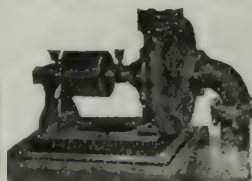
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If you want the best quality Write for prices.

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Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors wholesale prices. We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PERKINS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

Colusa County Starts Swine Association.

An enthusiastic gathering of hog breeders from all parts of Colusa county was held at Williams on Tuesday, March 17th, in response to the call of State Veterinarian Dr. Charles Keane. Hon. John L. Mendenhall, of Williams, presided.

In his address to the swine breeders, Dr. Keane called attention to the fact that hog cholera is the most devastating infectious disease that exists among domesticated animals; and that unless some thorough organized measures are adopted to combat this disease, the industry is greatly menaced. He stated further that during 1913 the loss from cholera was greatly in excess over that of any previous year, and this was due principally to the fact that the hog raisers, as a whole, had done nothing to assist sanitary authorities in combating the spread of cholera.

Attention was called to organized efforts that have been made in the past by the cattle and sheep men of this State in co-operating with the State Veterinarian for the eradication of Texas fever in cattle and scabies in sheep, and he promised hog raisers that if his department is offered similar co-operation, just as successful results can be obtained with hog cholera. His plan is to organize swine breeders' associations in the various counties of the State, starting with Colusa county. The object is to adopt approved sanitary methods and enforce them by the associations in the various counties.

The efforts of sanitary authorities alone in fighting such a widespread infectious disease as cholera are necessarily feeble, and co-operation from those interested is absolutely essential.

Dr. F. M. Hayes, of the Agricultural Experiment Station, quoted figures on the production and distribution of the anti-hog cholera sera which showed the efficacy of the serum as a preventive against hog cholera. He also noted that unintelligent use of the virus and serum method in the prevention of hog cholera had undoubtedly done its share in the dissemination of the disease. He believed that the plan outlined by the State Veterinarian, regardless of the use of serum, would materially reduce the losses from cholera, but with the intelligent use of anti-hog-cholera sera in addition to these methods, a successful fight against cholera could be assured.

Mr. Mendenhall stated that it was his opinion if the hog raisers of the various counties would bind themselves together in a strong organization, they would not only assist the State Veterinarian in his warfare against cholera, but by proper presentation to the Legislature could secure additional funds that would enable the State Experiment Station to prepare larger quantities of sera and supply it to the hog raisers free of charge. The swine industry of California could in this manner be built up to proportions commensurate with the facilities for hog raising in California. He drew attention to the statement of the State Veterinarian that less than five per cent of the pork consumed in California is raised here, which is, in his opinion, considering that California is an ideal swine-raising State, a great

incentive for the State to foster the industry.

A spirited discussion was held, and the unanimous opinion was reached that the plan as advocated by Dr. Keane is an excellent one and deserves the support of the swine breeders of Colusa county.

A committee consisting of seven swine breeders from various sections of the county was appointed to consult with the State Veterinarian and adopt plans and by-laws for a permanent organization. Then a second meeting of Colusa county swine breeders is to be called, at which time the by-laws and general plans of combating hog cholera will be adopted.

FRUIT RANCHES NEED HOGS.

[Written for the PACIFIC RURAL PRESS by W. D. GUTHRIE.]

At last some of the fruit growers have found that they can profitably grow hogs. Some turn off as many as fifty head a year, raised, grown, and fattened on what otherwise would have been wasted.

Practically every fruit rancher has a strip of land along some ditch, fence, or between some of the younger trees, that can be planted to pumpkins, melons, or citrons. Hogs like them and make good growth, but of course need to be finished off on grain to harden them up.

There is no kind of fruit raised without some waste, such as spoiled peaches, overripe grapes, wormy apples, raisins shattered in gathering, etc.

Some years prices on some varieties of fruits are very low. A few hogs will keep things cleaned up nicely around the place, take care of the slop from the kitchen, and help turn an almost worthless product caused by over-production into a small profit.

At this time of year there is lots of alfalfa and other grasses growing in the vineyard, orchard, along ditches and fences that a hog can use, and which you will never miss. Sweet potatoes, Irish potatoes and sugar beets are all good to make the pig feel and look like a hog ready for market.

In fact, it is rather surprising how many things that are now going to waste on certain ranches can be turned into profit by the hog route.

And the pork for home use might as well be cured at home. A great many ranchers raise lots of hogs, but do not cure enough hams and bacon for their own use. This is one of the ways to cut down the "high cost of living". It is too late to cure any meat this spring, but every rancher should make it a matter of conscience to kill enough hogs when the cool weather comes and cure enough meat for his own use next winter.

KALE IN THE RATION.

F. I. Mead, Tasoma, says the Northwest Horticulturist, has a good dairy herd on his farm, about 15 miles southeast of Tacoma, composed half and half each of Holsteins and Ayrshires. These pure-breds are kept and raised separately, both are profitable milkers, and when for any reason an animal should be turned into beef, Mr. Mead finds both fatten and sell fairly well

for that purpose. Last year seven acres of thousand-headed kale was grown, seed being planted about June 1st and plants transplanted to the field July 1st. Feeding of kale began October 15th, about 25 pounds per cow being fed all winter, and there is sufficient to last until grass in spring. The kale is cut and hauled every day or two as required, and Mr. Mead considers it the cheapest of the main feeds. In addition to the kale, about 20 pounds of hay, alfalfa and clover mixed, is fed, also ground oats and barley, from 5 to 10 pounds a day each, according to milking condition of the cows. About 2 pounds of oil-meal in addition makes up the ration. Mr. Mead raises part of the grain, but does his own mixing and grinding.

[Good summer growth of kale probably requires a coast location. In California valleys and foothills it will make a winter growth.—EDITOR.]

SILAGE ALWAYS READY.

To the Editor: After filling a silo with alfalfa, how long will it be before it is safe to begin feeding the ensilage? I have hustled for new subscribers, but am in a poor location, as we all take the PRESS.—L. C., Los Molinos.

[You can yank it out and feed it the next day if you wish, or any day thereafter. Thank you for the hustle: we know now why your district is going ahead so fast.—EDITOR.]



Does all work well

The business farmer should use a substitute for the horse—to be a good business man demands it. Business swings toward lowest costs—always.

The price of horses has increased 143% in the last ten years; everything about him—his hostlers, his harness and barns—has increased in price. Only one thing is still the same—his power.

Tractors are the horse's substitutes—but they should be able to do what horses can do. They should work on any sort of ground—they should do it without injuring the ground—they should not break down at important times—they should, in fact, do everything that the horse is able to do and much more.

There is just one tractor that will do all these things—the CATERPILLAR. It is a worthy substitute for the horse. You can use it on any kind of soil—soft, wet, muddy—even in swamps. It always does good work. It carries its own steel roadbed with it, lays it down, rolls over it and picks it up again. It can't pack the top soil and choke your plants, or cause moisture to evaporate.

CATERPILLAR

Reg. U.S. Pat. Off.

And—besides all this—it saves you much money in first cost and in operating expense; it works twenty-four hours a day if needed; it runs your saw-mill, feed-mill, hay-baler and a hundred other things.

You should know about the 1914 Caterpillar Construction—about the new transmission, the steel deck and running boards, the frame, the motor and many other improvements.

You should read about our system of inspection of all castings and parts—about the Caterpillar Service Department. This department keeps expert Caterpillar engineers always on the road, visiting all our tractors. They offer advice, instruct you or your engineer in Caterpillar construction and operation. They help you in hundreds of little ways to make good—at no cost whatever to you.

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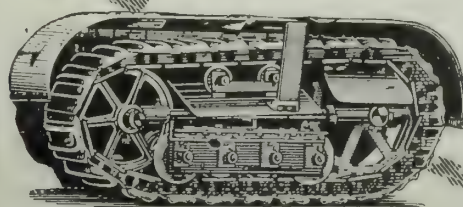
It tells about the Caterpillar in detail. It sums up the best results of nine years of Caterpillar building and forty-three years of successful manufacturing experience.

Tell us how many acres you farm and where it is. It will help us pick the right outfit for you. The Caterpillar is built in three sizes, 30, 60 and 75 h. p. We furnish nearly everything for the farm—plows, disc harrows, scrapers, harvesters, etc. You can get a catalog describing each of them. Write our nearest branch.

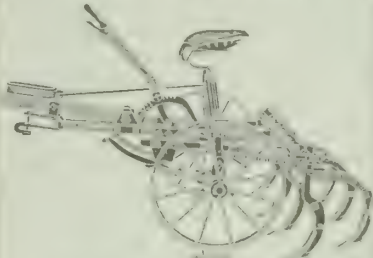
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MADE ESPECIALLY FOR
CALIFORNIA FARMERS.

Constructed entirely of malleable and steel, this JOHN DEERE ORCHARD CULTIVATOR will solve your problem because it is:

1. **LIGHT DRAFT, SIMPLE CONSTRUCTION AND HANDLES EASILY**, but built to stand extremely heavy strains.

2. **CONSTRUCTION HAND AND FOOT LIFT** makes lifting remarkably easy.

3. **PERFECTLY BALANCED** so that it causes equal penetration of front and rear shovels. Uniform work is the result.

4. **THE JOHN DEERE ORCHARD CULTIVATOR** is built in response to suggestions from California farmers.

5. **If you want a cultivator, that is strong, light, handles easily and does all the work of hard soils under severe conditions, the JOHN DEERE ORCHARD CULTIVATOR is what you are looking for.**

Write for Folder B-2, nicely illustrated, free for the asking.

JOHN DEERE PLOW CO.

San Francisco, Cal.

Victor Buck Rakes

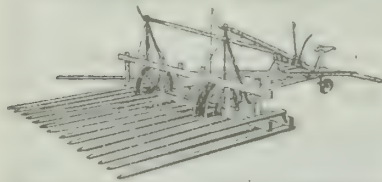
One of the hardest tools for a California rancher to get is a satisfactory Buck rake. Eastern made rakes do not meet Pacific Coast conditions. The Victor is especially adapted to Pacific Coast conditions. Has extra long teeth, extra wide high wheels and strong frame. Easy to work. Leverage perfect with heaviest load.

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10c for 3 months' subscription to "Glennings in Bee Culture" called the "Bible of bee keeping." Facts, stories, ideas worth dollars to you. Shows how to get more and better honey. Book on "Bee Supplies" sent Free. Offer open for limited time. Send stamps or coin at our risk.

THE A. I. ROOT CO.
Box No. 1, Medina, Ohio.
San Francisco Office, 58 Sutter St.

Fertilizers and Protectors.

To the Editor: I have bought a lot of fertilizer, made locally, and which is stated to consist of 800 lb. of bone, treated with sulphuric acid and the balance chicken or barnyard manure per ton. I intended to use this on a pear orchard which is in bad shape owing to the proximity of pine trees (now cut down) and also on young pear trees planted to replace missing trees in another old orchard. Is this fertilizer all right for the purposes named, how much should I sow per tree—old and young?

2. I have a lot of black tarred paper protectors which I am putting on my new orchard—sample enclosed. It is claimed by those who should know

southwest side of the tree. On account of danger from heat injury, light colored coverings are to be preferred.—EDITOR.]

SPRAYING TALL TREES.

Spraying the elms of St. James park of San Jose with a specially built Bean spray pump designed for use on tall highway shade trees, was witnessed recently by horticultural members of the University faculty, supervisors of several parks and estates, and representatives from two South American republics. The University will use it in experiments for control of walnut blight and aphids in



Spraying Tall Trees in St. James Park, San Jose.

that the color will draw the heat and cause sunburn. On the other hand the manufacturers assert that the perforations obviate this by causing ventilation and that the tar keeps off the rabbits; and they submit evidence of repeat orders in large quantities.

Do you think that these protectors will injure the trees?—H. H. P., Grass Valley.

[You have a first-class fertilizer for general purposes at present. If applied year after year a surplus of potash would accumulate. This would be corrected by using a larger proportion of barnyard manure. Your pear trees are probably in the lowland where there is already plenty of fertility. A ton of the fertilizer per acre will be more than enough. It is true that the black protectors hold all the heat contained in the sun's rays which strike them. Ventilation helps to a certain extent but the protectors should leave as much air space as possible on the

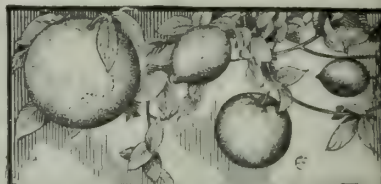
Santa Barbara county.

A 10-hp. Bean engine and six cylinder pump will throw the spray 60 feet high by a pressure of 350 pounds per square inch.

FOR DECREPIT FRUIT TREES.

To the Editor: Kindly answer the following in your magazine. Have an old orchard consisting of apples and pears and wish to know what mixtures should be used in spraying and formulas for same, also proper seasons in which to spray. The orchard has been neglected for some years and is in a poor condition, the apples being wormy and the trees in some instances are partly rotten and covered with a fungous growth. They have been pruned and plowed this winter.—C. M. G., Cloverdale.

[There are so many things involved in such a case that one cannot intelligently prescribe without seeing the patient. It is even possible that the trees should go to the woodpile and a new planting be made: on the other hand, the orchard may be capable of renovation. Consult your county horticultural commission, A. R. Gallaway, Santa Rosa.—EDITOR.]



The Grade of Fertilizer Determines the Grade of Orange

And All Citrus Fruits

Harvest time shows that the grade of crop (quality and quantity both considered) varies directly as the grade of fertilizer used. A "filler-fertilizer" produces a "filler-crop." But a 100% IMMEDIATELY AVAILABLE—and 100% ACTIVE fertilizer like

Nitrate of Soda

produces the maximum product.

To get a maximum orange crop, use a fertilizer that is ALL Nitrate—and 100% immediately available. Common sense dictates this. Good grade suggests it. Harvest time proves it, too.

"Orange Culture" is a book of vital interest to every grower. We will send it FREE if you will request us.

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NO BRANCH OFFICES

Nitrate
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Use Nitrate of Lime

**FOR TOP DRESSING
APPLY NOW!**

New Stock Just Arrived
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most available form and
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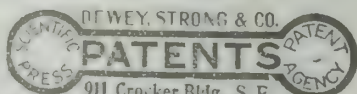
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Operated either by horse power or
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911 Crocker Bldg., S. F.
Circular containing 100 mechanical
movements mailed free.

TRIALS OF TEXAS PEACH GROWERS.

(Continued From Page 391.)

a worse pest which the grower is obliged to combat or quit growing peaches. This pest is the San Jose scale, which has caused so much trouble in every State in the Union. Millions of dollars have been expended in fighting this insect. Where allowed to do its work unmolested, this small, insignificant-appearing insect, which is no larger than the point of a pin, will completely kill an orchard in the course of a few years.

In addition to the two insect pests just named, there is another which causes much damage to the fruit itself. This is the plum curculio, which is a snout-beetle resembling somewhat the famous Mexican cotton-boll weevil, except that its exterior surface is rough and warty. The female of this insect lays from one to eight eggs per day. An egg deposited under the skin of the fruit soon hatches into a small whitish larva or grub, which eats its way into the heart of the fruit. The fruit stung by the curculio often drop off in large numbers and the injured fruit that still remains on the tree is knotty and wormy and therefore unmarketable.

There are still other drawbacks to the peach industry such as soil, unfavorable locations, etc., which might be mentioned. From the above review of what might be expected in the growing of the peach in Texas, the average reader would conclude that he would prefer to make his living at some other vocation. Yet, in spite of all these obstacles which have been mentioned, there is a very bright future to this seemingly risky industry. In the future, the peaches will be grown by men who understand how to care for an orchard, how to protect the tree against its natural enemies, how to grade fruit for the market and thus command satisfactory returns; or, in other words, our fu-

ture peach crops will be in the hands of farmers who will make a study of this particular fruit and give it the care and attention that it should have. Peaches can and will be grown in Texas at a good profit to the grower. The day of the peach industry in this State is just dawning, and doubtless in the not far distant future the delicious peach of Texas will be as famous as the navel orange of California.

[This is certainly a brave attitude. It reminds us of the words of the optimistic poet:

"When the weather kills your crop,
Keep a-goin'!
S'pose you're out o' every dime!
Gettin' broke ain't any crime;
Tell the world you're feelin' prime!
Keep a-goin'!"

"When it looks like all is up,
Keep a-goin'!
See the wild birds on the wing!
Hear the bells that sweetly ring!
When you feel like sighin'—Sing!
Keep a-goin'!" —EDITOR.]

THE OLD BARTLETT PREFERRED.

To the Editor: In a recent issue one of your subscribers wanted information about Winter Bartlett pears. Twelve years ago, having planted about 70 acres to the common Bartlett, and having about 10 acres more to plant, I thought, rather than put all my eggs in one basket, I would plant the other 10 to Winter Bartletts. When these trees began to bear I found they were too rough and coarse for market and for canning. They were useless, as they canned with a pink color. I grafted them over to the old Bartlett. I find that is good enough for me. The Bartlett pear being a late bloomer, it misses the frost, and being an early pear it escapes the winds in the fall by being ready to pick the first of August. Being so well known the world over, it

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Corcoran, Jan. 7, 1914.

Mr. C. F. Daniells.

Dear Sir: I consider my Hinman investment one of the best I have ever made.

Yours truly,
C. W. GINN.

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G. M. BROWN.

Santa Clara.

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The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Farm Development, Hays.....	\$2.00
Manual of Laws.....	2.25
Farm Buildings.....	2.20
Breeding Farm Animals, Marshall.....	1.60
Hog Book, Dawson.....	1.60
The Dairy Farm, Gurler.....	1.10
Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoesmith.....	.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees and California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
New Onion Culture, Greiner.....	.50
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Home Pork Making, Fulton.....	.50

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138-42 South Main St., Los Angeles

Chinese Egg Trouble Self-Adjustable.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Everything under the sun finds its level. Some of Petaluma's poultrymen have been losing sleep and worrying over the competition of the Chinese eggs. Several editors of the daily papers have taken sides, some with and some against the Petalumans; one even went so far as to say that Chinese eggs were produced under better sanitary conditions than prevailed at many of the small ranches and farms of California. Very much of what has been written could very well have been dispensed with, as it helps neither side. It is too bad that with our high priced feed we have to compete with eggs coming from places where eggs can be produced very cheaply, but we consider that we, not the Chinese, voted the Democrats in. I presume most people knew that the Democratic principles called for "free trade," and that means more competition. But, as will be seen from the following extract from the Spokane Daily Chronicle, this question, like many others will adjust itself in time so there is no need to lose sleep over it:

"China eggs took a drop on the local market yesterday when the Schallinger Produce Company voluntarily delivered 168 cases, 60,480 eggs to be exact, to the city crematory to be incubated."

"I don't know whether these eggs will produce sea gulls or serpents," said crematory superintendent Arthur E. Peterson, who directed the cremation of the product beyond the sea, "but I feel safer now that they are here."

And the stokers of the city crematory heaved sighs of relief as the 60,000 eggs popped and sizzled, turning first to omelets and then to crematory ash.

This consignment of Chinese eggs was brought into the city several weeks ago by the Schallinger Produce Company, and a part of the consignment was offered for sale in the local retail stores. In a statement made early this week, John F. Arnold, manager of the produce company, declared his belief that the eggs were suitable for human food. He declared his intention of placing several hundred of the eggs in incubators to show they were good eggs. This followed the report that they were sea gull eggs. A bacterial count by City Bacteriologist M. M. Patton three days ago showed 90,000,000 bacteria in one of the eggs.

A little publicity of this one consignment of Chinese eggs will do more real good than all the Petaluma poultrymen can do with just fighting. Turn on the light. That is the one safe remedy for all evils, "Let there be Light," is the great text, and we now turn on the light, where our granddads and grandmams said, "Sh—keep quiet."

FEBRUARY EGG FERTILITY.

Mrs. E. J. S. Newman, "What would you consider a good percentage of fertility in February eggs. How does the Ancona rank as a layer?"

[The fertility is very often determined by climatic conditions, if a storm were to drive the fowls indoors from their usual ground and inter-

fere in any way with the feeding it would naturally reduce the fertility; as a rule we generally look for about 80% in this climate. I have just taken off a 76% hatch, but the storm of February played havoc with the feeding, and with the hens' comfort in laying. The nests wet through several times and the hens were more than a week without any kind of feed except grain and water.

The Ancona is supposed to be a very good layer, but that is about all they are good for, the meat being of the very poorest quality and nearly nil in quantity. They are certainly having a boom just now but I do not think it will last, because the chicks cost just as much to raise as other varieties and if the carcass will not bring something in return for the cost of raising the chick I do not see how the poultryman can make his profits.]

HATCHING DUCK EGGS.

Please tell me through the columns of the Press something in regard to the incubation of ducks.—E. R. W., Fallon.

[Under the title of "Ducks for Profit," I gave quite full directions as to incubating and raising ducks in small lots, not very long ago, but of course this may be a new subscriber and so may not have seen it. The Press family is getting larger every week, I am told, I wonder how long it takes for a farm paper like the Press to reach maturity? Because if we keep growing the Press may get too big for its clothes.

But now for ducks. Their eggs may be incubated in three different ways, the natural way is with ducks as the setters and mothers second way is to hatch with hens. As hatchers, any of the large breeds of hens make good with duck eggs, but it is cruel to let them brood the ducklings. The best way is to set as many hens as you want to hatch duck eggs at one time. Place the ducklings in a comfortable fireless brooder and let the hens go back to their business of laying eggs.

Duck eggs require 28 days incubation so you will need good steady hens. The eggs will do better if set on the ground. Scoop out a saucer shaped hole and put a little hay in it. Then set the hen on old hard boiled eggs and cover her with a ventilated box to test her sincerity. If the hen is a little rough at first the boiled eggs don't break and she does not contract the egg-eating habit. A few tobacco stems put in the nest will keep lice and mites away so that the hen may sit in peace.

MOISTURE IS NEEDED.—Now the only difference between hen eggs and duck eggs is the moisture and length of time to incubate. By having duck eggs on the ground they absorb whatever moisture is there; and besides this, it is necessary to sprinkle the eggs just before the hens go on the nest. About the second week begin to sprinkle every third day, the third week sprinkle three times and the last week sprinkle every day, the last four days not heavily, but just a little to make moisture. It is sometimes necessary to help young ducklings out of the shell, but this is generally due to lack of moisture, so if you look after the sprinkling it is helping the little ducklings to help themselves.

INCUBATOR DUCKS.—The third way of incubating ducks is the most prevalent where ducks are wanted in quantity. This is with incubators. If you hatch with incubators, the very

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S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and standard qualities: \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, San Luis Obispo County, Cal.

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HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

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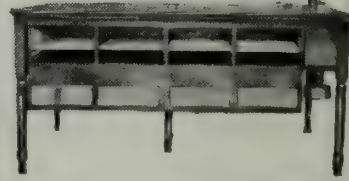
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best hatches come by running the machine at a much lower temperature than for chickens. Start it at 102° and run the first week at that, never letting the heat get above if possible. The second and third week, run it at 102½° and the fourth week at 103°. The first two weeks, turn the eggs as if hen eggs and move on the tray so as to get all heated alike. The third week commence to sprinkle the eggs just a little every day and the last week in addition to the sprinkling keep the moisture pans full of warm water all the time. At hatching time keep the machine closed unless you see that the ducklings need help, in which case it pays to open the door and give the needed help, but be as quick as possible and close the machine up as soon as you can, having a warm temperature in the incubator room. The ducklings should be left in the machine and treated as you would treat chicks of the same tender age. Warmth is more essential than anything else the first day or two, and when you do begin to feed, give rolled oats, cracker crumbs, or bread soaked in a little warm milk. For the first ten days give warmed water; cold water kills more ducklings than everything else combined. Cold water cramps them both internally and externally and that means death. Be sure to protect your water vessels so that the ducklings can't get into them. They should be deep enough for the ducklings to reach in up to the eyes but so protected that they cannot wash their feet.

CANNIBAL CAUSES.

To Mrs. Swaysgood: Will you kindly write out in the paper some suggestions relative to cannibalism among brooder chicks?—H. H., Athlone.

[Cannibalism is caused not by any one thing, but by several: (1) Too much light, having the windows down to the floor where the chicks congregate to sun themselves, and, having nothing else to do, peck each other's toes. Darken the windows. (2) Lack of exercise. The best remedy in this line is to keep litter on the floor and make them scratch for the food; also throw in cakes of sprouted oats or barley for them to pick at. (3) A lack of animal food. There has been such a lot of namby-pamby stuff going the rounds about liver disease and such things that people try to make vegetarians of their chicks, but Nature won't stand for it; the natural food of a chick is insects and grain mixed. We have no insects, so give meat as a substitute. Boil a beef heart tender, cut it into narrow strips and throw it to the chicks. This is the best cure in the world for cannibalism, which is simply Nature's call for meat.—SUSAN SWAYSGOOD.]

DISCOURAGED SITTING HENS.

To Mrs. Swaysgood: I would like your advice as to what to do for my Orpington hens. Several days after setting them they leave their nests, their combs turn black, and they have a greenish dysentery; are healthy before I set them; they have a separate pen or house; are fed wheat; have clean water, dust bath, and plenty of ventilation in the house. Have lost about five hens and their settings of eggs in the last week. I experimented with one hen by pouring olive oil down her throat, and have put Epsom

salts in the water. I found the hen dead this morning.

[I don't blame that one hen individually for dying. You must have been taking lessons from the British doctors in forcible feeding. What you neglected to say was whether you had examined the nests for mites. Now please do this at once, for they do drive hundreds of hens off their nests by sucking their blood; then of course the comb turns dark and finally black and the hen dies. Open up the feathers and see if you can find them; also see if the eggs are speckled as if flies had been on them; if so, you have found the cause. The remedy is to disinfect the house at once. Put some tobacco stems in the nests and clean off the hens with a dip made of creolin and water just warm. If there are no mites, your hens have indigestion. In this case, parch in the oven all the wheat you feed to them. Do not burn, but just bake slowly until it smells so nice you want to eat it yourself. Give them all of this parched wheat and rolled oats they will eat, and put half a teaspoonful of tincture of nux vomica in a quart of water; divide that among all your setting hens. Some hens are so feverish over setting that they neglect to get off the nest to eat and drink until the digestion is impaired; then it is too late unless the hen has very good vitality. I always make it my business to go around early in a morning and lift off all setting hens that have not been off. In this way I get them started right and then they get off regularly. Hens have no judgment—at least they don't use it when broody, so we have to show them what is best. The idea of letting hens please themselves about leaving the nest for food doesn't pay in dollars and cents. Those hens and eggs cost considerable and are worth looking after.—SUSAN SWAYSGOOD.]

TRESPASSING HENS.

To the Editor: My neighbors across a line and across a highway object to my hens trespassing on their property. What is the legal solution of the difficulty? Must I do all the fencing? If I choose to do nothing, what legal redress have they?—READER, Live Oak.

[You have no right to pasture your poultry on other people's property. It may be a benefit to them and they may allow it, but, if they have objected, you are notified to take care of your stock and you have no redress if they should take to the shotgun. In the larger animals the aggrieved person has to catch and impound the stock, according to the laws of procedure, but we imagine no laws require an aggrieved owner to catch trespassing hens. If you do nothing you will probably have some dead birds thrown over your fence, and you might also be sued for damages.—EDITOR.]

POULTRY YARD SHELTER.

To the Editor: I would like to plant some fast-growing trees or shrubbery to act as a wind-break around my chicken yards. The ground is light sandy soil.—S. H., Manteca.

[For an evergreen shelter, closing in near the ground, as is presumably desirable for fowls, we know nothing better than the Monterey cypress. Small plants, set four feet apart, will close in the first year. As a lighter

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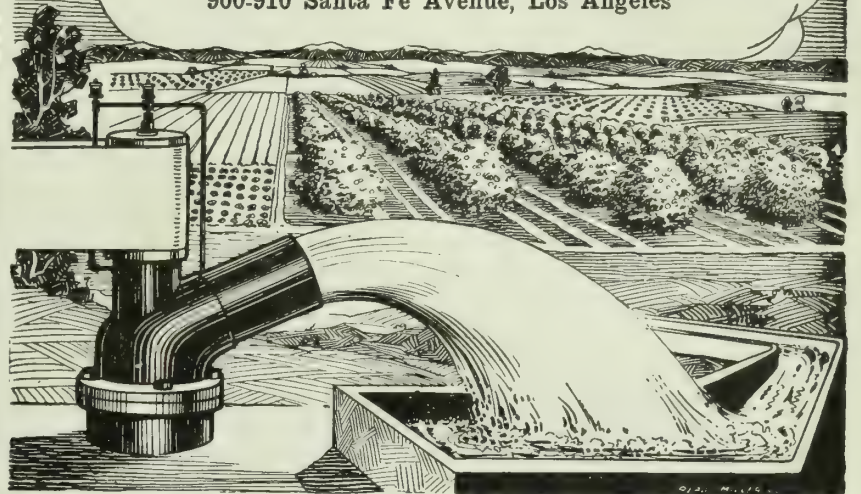
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At the Napa Egg Laying Contest our pen finished second, 66 pens competing. In our own class, White Leghorns, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

BLOM & SON, Napa, Cal.

shelter with some edibility in the leaves, we prefer the "tree malva," which is grown easily from the seeds. The plant is very common in all valley and coast regions.—EDITOR.]

FOR WORMS IN HOGS.

A remedy which is recommended by the Iowa station as a preventive of worms, and which is to be kept before the hogs at all times, is made of three parts each of Glauber's salts, sal soda, copperas, common salt, and one part of flower of sulphur. This mixture must be kept covered from rain, and can be made up in large quantities at home, as it is easily prepared and is cheap in cost of materials.

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The Home Circle.

The Boon of Silence.

And so Peter Martin reluctantly came to the conclusion that he would have to consult a physician. He had never been to a physician in his long life, and to have to go now was bitter to him. It was a luxury. He felt he couldn't afford it. A man who keeps a \$10-a-week family on \$8 has a hard time of it in this world. For 30 years the roar of the city had been in his ears, and he had had no vacations. So it was just his luck to stumble into the office of the most expensive doctor in the metropolis. If the servant had seen him he would not have gone into the presence of the great doctor, but Martin knowing nothing of how a man whose time is worth \$10 a minute is hedged in, and happening to come when the last patient was undergoing examination, walked right from the street, and by good luck, to the infinite astonishment of doctor and patient, stumbled into the consulting room.

"There is something wrong with me," he said, fumbling with his hat. "I don't know just what it is, so I thought I should see a doctor. Which of you is it?"

The patient waved his hand toward the great specialist, and Martin turned his pathetic, appealing glance toward him.

"See what's wrong with him," said the patient in a whisper, who was evidently impressed with the humor of the situation. He thought it funny that so evidently poor a man should consult a physician whose fees amounted into the hundreds.

The doctor asked many questions, and examined his new patient carefully. Then he stood away and looked at him for a moment.

"There is nothing radically wrong with you. What you need is absolute quiet. Medicine will not do you any good. Get out of the roar of the city for a couple of weeks or a month, if possible. Go into the country, to some farmhouse. That's all you need."

Peter Martin sat down with a sigh of exhaustion.

"I cannot get away," he said; "I would lose my place, and, besides, I can't afford it. I get only \$8 a week."

"Ah, I am sorry for you," said the doctor, "we have no prescription for poverty."

The wealthy patient put his hand into his pocket and drew out some money.

"Here," he said, "that will help you to a little vacation."

Peter shook his head. He was too nervous and shaky to draw himself up indignantly, as perhaps he should have done.

"I have never taken any money that I did not earn," he said, "and I am too old to begin. How much is your fee?" he asked, looking at the specialist.

"I usually get 25 cents," answered the great man; "that is, of course, where I don't give any medicine."

"Of course," said Peter, simply, drawing out his lean purse and paying over the coin.

"Good morning, gentlemen." And with that, Martin tremulously departed.

"You did that nicely," said the patient, rising. "I must follow him and try to smooth over my blunder."

"Are you going to experiment with him?"

"Perhaps."

Martin, as he walked slowly down the street, felt a touch on his shoulder. He turned and saw the man who had been with the doctor.

"If you come with me, I think I can help you. Will you step into my carriage?"

Somewhat reluctantly, Peter did so. He did not like the man, but there was something in his dark glance that compelled obedience. When the carriage stopped, Martin was taken into a house that was luxuriously furnished.

"Sit down," said the stranger. "Now let me understand thoroughly about your occupation."

Martin told him all about it, and the stranger listened patiently.

"If I understand you, then, your hearing is of no use to you in your business—that is, it depends on your sight only. If you were deaf, you could still hold your place. Am I right?"

"Quite right," answered Peter.

"Well, then, I want to try an experiment on you. I think it will help you; in any case, it will do you no harm. Do you consent?"

"If it will help me."

"I think it will. Now fix your eyes and attention on this."

The machine referred to was a small box with a thin, upright rod, on which were two horizontal arms, each with a small, round, shining mirror at the end. The dark man touched a string and the mirrors rapidly revolved. Peter looked at the whirling mirrors intently for a moment, then leaned slightly forward with his eyes widely opened.

The stranger, watching him keenly for a few moments, at last stopped the machine.

"You are asleep," said the man, quietly, passing his hand over Peter's face.

The eyelids closed and Peter answered not.

"When you awake you will be stone deaf; you will hear absolutely nothing. You will have to be very careful at the street-crossings and wherever there is danger. Now wake up."

A shiver ran over Martin's body, and he looked around wildly for a moment.

"What have you been doing to me?" he asked.

"Can you hear me speak?" said the man, loudly.

"What have you done to me?" repeated Peter. "Everything seems unnaturally quiet."

The dark man drew a writing-pad toward him and wrote on it, handing the result to Peter. He read the words:

"You are stone deaf. Try the effects for two weeks and then come back and see me. If, at any time before, you wish to have your hearing restored, come to this address. Try the effect for two weeks if you can stand it."

Here followed the man's name and address. Peter folded the paper in a dazed sort of way and put it into his pocket. He went out into the street. The traffic was as busy as ever, but an awful silence was over the city. There was something unearthly in the appearance of bustle and the absence of all sound. He was in a city of phantoms, and it frightened him at first, but finally there seemed to come over him a sweet peace, because noise did not exist.

When he went home that night his good wife received him as she had done these many years.

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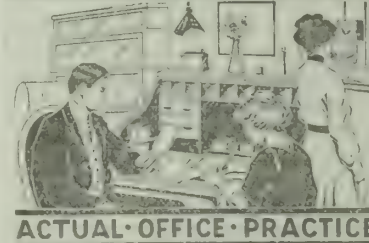
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what's kept you? Here I am toiling and mulling and getting something to eat for an old fool that doesn't know enough to come home for it before it's cold. Nice sort of a family man you are, you doddering old—say! what are you looking at me like that for? What's the matter with you? Been drinking again?"

Now Peter neither drank nor smoked, which no one knew better than Mrs. Sally Martin. He couldn't afford either, but, as he always winced when she accused him of it, she accordingly flung it at him.

"Sally," he said quietly, "I'm deaf. I suppose you are speaking to me, but I cannot hear a word. You'll have to write it down."

"Write it down!" cried the good woman aghast.

She had some idea that he was shamming, but as she watched him she saw that this was serious. She broke out occasionally in wrath, but quickly subsided and murmured: "Oh, Lor'!"

And Peter Martin spent the first evening of peace at his own fireside for twenty years.

In two weeks Peter Martin called on the dark man in the fine house. He was looking very much better in health than he had done when he left that place a fortnight before. The far-away look of the deaf was already beginning to appear in his eyes. A sweet serenity sat upon his countenance.

"I am pleased to see you look so—" Then the man remembered and drew his writing-pad toward him.

"If you will sit down in the chair, I will take away your deafness," he wrote.

Peter read it with a smile.

"I merely came to thank you," he said. "I will not sit down."—Detroit Free Press.

After Thirty.

"I never saw my daughter economical but once."

"How did that happen?"

"She was buying candles for her birthday cake."—Kansas City Journal.

Father: "Have you seen with the microscope all the little animals that are in the water?" Tommy: "Yes, father, I saw them. Are they in the water we drink?" "Certainly, my child." "Now I know what makes the singing in the teakettle when the water begins to boil."



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"You look sleepy, Jones. You must have been up with the sun this morning."

"Yes; I was up with him all night."

—Judge.

Some Plants That Feed on Insects.

In marshy, boggy places there grow some curious plants which have the habit of feeding on insects. The soil they grow in is responsible for this habit, as it does not contain the nitrogen and sulphur which plants require, so they must get these elements the best they can. They do so by preying on small insects, the juices of whose bodies furnish them with what they need.

The sundew is a harmless-looking little plant which I have often met in boggy spots in Maine, and which may be found in other States. Its round leaves, spread out in rosette fashion near the ground, are covered with fine red hairs slightly bulbous at the end. The color and the smell of a sticky liquid with which the leaves

are covered attracts insects. When one of these alights on a leaf, the hairs close in from all sides and hold the foolish visitor fast until, with the aid of the fluid pouring out from the tiny glands at the ends of the hairs, the plant has well digested it.

In North Carolina grows the Venus's flytrap, a small plant only a few inches high, which has a deadly trap for insects. The leaves which grow from the root are rather long and are divided crosswise into two parts. The portion at the end has a strong hinge up the middle, and its two edges fringed with hairs close over the insect which alights on it. The leaf stays shut anywhere from nine to twenty-four hours.

The pitcher plants, several varieties of which grow in the United States, catch their insects in pitchers formed by the growing together of a long leaf at its edges. These pitchers are rich dark red in color and secrete a sweet liquid which attracts their prey. Their inside walls are covered with fine stiff hairs pointing downward which make entrance to the trap easy, but retreat impossible.

In the most common variety the pitchers are open at the top, though there is a slight hood (the true leaf), so they always hold water which drowns the fly and helps dissolve it as well. However, the hood of the California plant reaches so far over that no water can enter, and it depends on its juices alone for dissolving the insect.

The bladderwort, whose delicate yellow blossoms rise above dirty pools in which the rest of the plant is submerged, catches innumerable small insects in bladders attached to its roots, leaves and stems. In these the unwary ones are safely imprisoned by means of valves opening inward.—Mabel B. Goodlander, in the Churchman.

Jellied Salad.

Any meats or vegetables may be molded in a jelly and served with mayonnaise or boiled dressing. A good formula for such jelly is as follows: Soak one-half box or two tablespoonfuls of plain gelatine in one half cup of cold water for a half hour. Then pour over this one pint of boiling water. When the gelatine is thoroughly dissolved add one-half cupful of mild vinegar, one teaspoonful of salt, one-half cup sugar and juice of one lemon and strain. This is then ready for whatever you wish to put in it. It can be made very beautiful if moulded in a fancy shape. Pour just enough gelatine into the mold to cover it about one-fourth inch. Then arrange in fancy shapes the pieces of vegetables, fruit or nuts that you wish to put into it and set on the ice until the gelatine sets. Then pour over it another thin layer of gelatine and let this set. Then add slowly the salad ingredients and gelatine, allowing each layer to set. If all the warm gelatine were poured in at once it would melt the first layer and all the ingredients would float to the top. A design can be worked around the sides of the mold in the same way. If meat salad is made, a pretty decoration is a row of sliced stuffed olives around the side. This must stand until the gelatine is firm enough to hold its shape. For this reason it is well to make it the day before it is to be used, particularly in summer time. Cold hastens the setting process in gelatine. When ready to serve set the mold for a min-

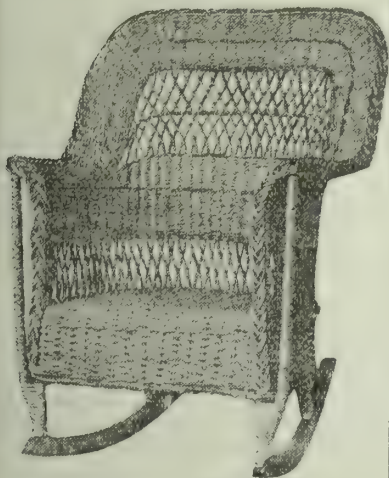
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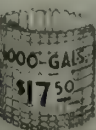
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ute in warm water, then turn onto a plate of lettuce leaves or other salad garnish. Pile the dressing around the mold and decorate in any appropriate way. Boiled dressing with whipped cream is delicious for the salad. If vegetables such as cabbage, sweet pepper, celery, are molded in the jelly, it can be served with cold meat for a luncheon the day before, it is an ideal Sunday night lunch if guests are expected.

Good Soap-Bubbles.

Fill a quart bottle half full of distilled or soft water, and sift into it four-fifths of an ounce of pure Castile soap powder. Allow the powder to dissolve thoroughly, then add one-third of a pint of pure glycerine, mix thoroughly and let stand until all bubbles have disappeared. Use the solution in a temperature of sixty-five or seventy degrees. After the solution has been used a few times, or if it fails to produce satisfactory bubbles, it may be freshened up by adding a little more glycerine.

"There's just two things that break up most happy homes," observed a philosopher.

"What's them?" inquired a listener.

"Woman's love for dry goods and man's love for wet goods."—Hershey's Weekly.



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Citrus Fruit in Cooking.

Lemon Water Ice.—Boil 3 pints water and 1 quart loaf sugar until reduced to nearly 1 quart of fluid, skimming when necessary. When cold, add the juice of 7 lemons and the yellow rind of 4 of them sliced thin; let this stand 1 hour, then strain into the freezer without pressing. When beginning to set in the freezer, stir in lightly and well the beaten whites of 4 eggs. Freeze.

Orange Water Ice.—The juice of 6 and the grated rind of 3 California oranges, 1 pint of sifted sugar, juice of 2 large lemons and 1 pint of cold water. Stir together till all dissolved. Freeze.

Lemon Pie.—5 eggs, 1½ cups sugar, 1 cup water, 2 tablespoonful corn starch, 1 tablespoonful butter, 2 small lemons. Beat all the yolks and 1 white till very smooth; add the grated peel of 1 lemon and the sugar, beat well; stir in the corn starch, add the lemon juice, butter and lastly the water. Cook, stirring constantly. Enough for 2 pies. Line the pie pan with rich paste and bake. Prick the blisters and when done, fill with above mixture and cover with a meringue made of four whites well beaten and 4 tablespoonful of powdered sugar. Return to oven and brown slightly.

Lemon Orange Marmalade.—3 lemons, 6 California oranges. Slice both as thin as possible, taking out the seeds. To each pound of sliced fruit add 3 pints of cold water and let it stand for 24 hours; then boil ¾ hour and let it stand another 24 hours. Then weigh and to every pound of fruit add 1½ lbs. of sugar. Boil until quite clear, or will make jelly about ¾ hour. Some use only 1 pound of sugar. This is an excellent marmalade.

Fruit Punch.—2 cups sugar, 4 cups cold water, 2 cups chopped pineapple or 1 quart can, 1 cup orange juice, ½ cup lemon juice. Boil water, sugar and pineapple 20 minutes. Add fruit juice, cool, strain and dilute with water. Add any fruits in season, as crushed strawberries, bananas, cherries or peaches.

Dried Fruits.—When stewing dried fruit, as apples, apricots or peaches, add a few slices of lemon and the flavor will be greatly improved.

Lemons in Sickness.

Either of the following combinations is valuable in la grippe, coughs and colds. If taken freely at the beginning of an attack, it will generally break it up. Take hot at night just before retiring.

Flaxseed Lemonade: Flaxseed (whole), 4 tablespoonfuls. Boiling water, 1 quart. Juice of 3 lemons. Sweeten to taste. If too thick, dilute with water. Strain.

Slippery Elm Bark Tea: Slippery elm bark in small pieces, 2 ounces. Pour on 1 quart boiling water, cover and let stand until cool. Add juice of 3 lemons, sweeten.

Fever Drink: Juice of 2 lemons. 1 teaspoonful of cream of tartar. 1 quart of water. Drink freely during continued fevers.

As a Toilet Water: In arranging the toilet of the sick, add lemon juice to the water used for bathing; it is refreshing and will reduce fever.

As a Mouth Wash: To clean the

mouth, teeth and tongue of a patient, rinse or wipe with lemon juice slightly diluted.

For Biliousness: The juice of a lemon in water, before breakfast, and at bed time, is good for bilious troubles. Keep it up for several days. Never drink the pure juice, always dilute it.

Impure Water: If you are suspicious of the drinking water and cannot boil it or get better, use the juice of a lemon to a glass. The strong germicidal action of the juice should purify it.

For Bee Stings: Bee and insect stings are relieved by a few drops of lemon juice.

Lemons in the Laundry.

Softening Water: Lemon juice softens the water and renders washing less difficult. It also helps to remove dirt and grease; only be careful not to use it on colored clothes.

To Remove Stains: Lemon juice will remove ink, rust or fruit stains. Do it this way: Moisten the stained goods in cold water, lay out in a hot sun, squeeze a few drops on the stain, let it dry, then repeat the juice and drying until stain is gone. For iron rust and ink stains, put a pinch of salt on the moistened stain and then apply the juice. Repeat. Only for uncolored goods.

Cleaning Brass: To clean brass or other metal, cut a lemon and sprinkle salt on the cut surface, rub well with this.

"Waiter, look here. Isn't that a cow's hair in my butter?"

The waiter took up the butter, examined the hair, and then replaced the plate before the patron with a nod of satisfaction.

"Yes, sir," he said, "that's a genuine cow's hair. We serve them with our butter, sir, to show that it isn't oleomargarine."

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From Iowa



Our Young Folks

Ruth's Dog, Towzer.

By HARRIET T. COMSTOCK.

A very funny thing happened at Ruth's house the other day, and brought her into ill-repute with at least one member of the police force.

She is a very serious little girl of five, with great solemn, truthful eyes. No one would ever dream of her telling what was not exactly true, and she never made a joke in her life.

She was sitting on the bottom step of her stoop on this special morning, when Mr. Smith, the big policeman, came along. He interested Ruth very much by going to the door of every house, a little open book and pencil in his hand. After talking with whoever came to the door for a moment, he turned away, sometimes writing in the little book, but oftener not.

At the minister's door he wrote something, and at Dr. Blake's. Ruth particularly noticed that.

Mr. Smith was a tremendous power in the neighborhood. Not a boy dared to shout a shout or fling a ball when he was in sight; and, as for the little girls,—well, they always breathed freer when Mr. Smith turned the corner.

Ruth watched the big man until he reached her house. Then, with a quaking heart, she saw him mount her steps. Mamma opened the door.

"Do ye kape a dog, mum?" asked Mr. Smith.

"No," replied mamma; and to Ruth the dear voice seemed to shake with fear.

Mr. Smith bowed sternly, and turned to come down.

It was perfectly clear to Ruth now. Mr. Smith was putting the entire neighborhood under arrest, except those who kept dogs!

The minister had one, and so did Dr. Blake. She meant to save mamma if she could. So she tremblingly faced Mr. Smith on the bottom step, and said gently, "Mamma forgot Towzer, sir."

Mr. Smith was all attention.

"Is this your house?" he questioned.

"Yes, sir." Ruth's great, honest eyes gazed frankly into the grim face, looking down.

"And you have a dog, eh?"

"Yes, sir. Towzer is our dog."

Up the steps again went Mr. Smith, and sharply rang the bell.

Mamma replied.

"Where's your dog, mum?"

"I told you that we had no dog. We have never had a dog," mamma answered.

"Oh! This is an old trick, mum, though we don't meet it often in these neighborhoods. However, you've got a truthful little girl; and she isn't so sure that ye have no dog. I insist upon seeing him, mum!"

A funny little gleam came in mamma's eyes.

"Ruth," she called, "you may as well bring Towzer. The officer insists upon seeing him."

Mr. Smith's face grew very red as Ruth ran upstairs.

Presently she came back. "Here's Towzer, sir," she said with a quiver. "Here's our dog!" And she held up to the astonished eyes of the big policeman a dirty Canton-flannel dog, one shoe button eye quite gone, his tail in shreds, and his detached ears pinned to his head with safety-pins!

If Mr. Smith had been wise, he

would have laughed, but Mr. Smith was not on the police force because of his wisdom.

Mamma, though, laughed merrily, while Ruth hugged Towzer, and felt that in some roundabout way he and she had saved the family from an awful fate.

The Most "Honorable Mention."

Dorothy and Uncle Ralph were having one of their twilight talks. It was Saturday evening.

"How about the essay, Dot? Did you finish it?"

"Yes." Dorothy sighed a little.

"Yes, Uncle Ralph, I finished."

"And will it take the prize?"

"Uncle Ralph!" Dorothy's voice was reproachful and protesting. "It isn't fair to make fun of me; and you know very well I never dreamed of taking the prize for anything. But I'll tell you—this confidentially—"I did rather hope I might succeed in getting 'honorable mention.' You and father would have been just a little proud of that, wouldn't you? But"—

"Well?"

"Nothing, only it did seem as if there were nothing but interruptions from the moment I sat down with my paper and pen. First, there was Nora to ask something about the puff tarts—as if any other dessert wouldn't have done just as well today. Then Clarice came with her doll's bonnet-strings in a knot that must have taken at least ten minutes to untie; and directly after her Fred, with a button off his coat. Before I had finished the second page, little Kitty Conrow ran in to ask my advice about the trimming of her hat; and Harry, to see if I could do something for his kite, and—oh, I can't tell you half of them! Even mother had to come once. Poor mother!—she was sorry to disturb me; but I don't think one of the others thought it mattered a bit. Positively I felt quite cross sometimes. Now, what kind of an essay could a girl write under those circumstances,—a girl like me, you know, who isn't very clever anyway? I did my best, but there'll be no 'honorable mention' for Dorothy Evans!"

"I don't know, Dot." Uncle Ralph spoke reflectively. "Having to stay in this corner,—that's the bother of a broken leg, you know,—I can't help hearing a good many things. I heard Nora, for instance, saying to herself, as she came away from the library door this morning: 'Bless Miss Dorothy's heart for a rare lady!' And I heard Clarice singing her doll to sleep in the little rocking chair yonder. The tune of her lullaby was 'Sweet Galilee,' but the words were just 'Dear Dor-o-ty! dear Dor-o-ty!' over and over. And it must have been your neighbor Kitty whose voice I heard under the window, telling some one delightedly that Dorothy had given her 'just the loveliest idea' for her hat! At any rate, it was Harry, and no other, who was declaring so emphatically to his playmates, 'I tell you, fellows, our Dot's a brick!' Fred, too—Fred said to me, as he was going out to the office this afternoon: 'Have you ever noticed what pretty hands Dorothy has, Uncle Ralph? I have thought of the very thing for a graduation present for her!'"

"It's a silver thimble!" laughed Dorothy, who is an October child, and was longing for an opal ring.

"It's no such thing. But I never tell secrets. I was only going to say



The Spirit of Service

WHEN the land is storm-swept, when trains are stalled and roads are blocked, the telephone trouble-hunter with snow shoes and climbers makes his lonely fight to keep the wire highways open.

These men can be trusted to face hardship and danger, because they realize that snow-bound farms, homes and cities must be kept in touch with the world.

This same spirit of service animates the whole Bell telephone system. The linemen show it when they carry the wires across mountains and wilderness. It is found in the girl at the switchboard who sticks to her post despite fire or flood. It inspires the leaders of the telephone forces,

who are finally responsible to the public for good service.

This spirit of service is found in the recent rearrangement of the telephone business to conform with present public policy, without recourse to courts.

The Bell System has grown to be one of the largest corporations in the country, in response to the telephone needs of the public, and must keep up with increasing demands.

However large it may become, this corporation will always be responsive to the needs of the people, because it is animated by the spirit of service. It has shown that men and women, co-operating for a great purpose, may be as good citizens collectively as individually.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

that the best of all things I heard today was the ring in your mother's voice when she said, 'Dorothy is such a comfort!' Won't that do for 'honorable mention,' Dot?"

"I should think it would!" There was a little quiver in Dorothy's low voice, and the brown head went down on the arm of the invalid's chair. "Why, Uncle Ralph, it's better than the prize itself, if only"—and then she could say no more at all, but Uncle Ralph understood.

What do you think about it, girls? This, at least, is the kind of 'honorable mention' that every girl can earn.—Boys and Girls.

Senator Vance was one of a large family of boys. Their mother hoped that at least one would have been a good Presbyterian minister, but they slipped through her hands. Zebulon was the youngest; and all her hopes centred upon him, until he said, "Mother, I am sorry, but I cannot become a minister." "Why not? What is the reason?" He answered, "I am not good enough to be a minister." She was sorely troubled, but at last faltered out, "Zeb, don't you think you are good enough to be a Unitarian minister?"—Pacific Unitarian.



Does more work with less draft and leaves a better surface mulch than any other cultivator made.

It Works Right Up To Your Trees Especially Adapted to Work in California Orchards

Cultivating the entire surface beneath low branches without disturbing boughs or fruit. Write for catalogue and free book "Modern Orchard Tillage."

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SECOND HAND PIPE

Very best quality of selected second-hand water pipe and standard screw casing pipe. For quality and low price you make no mistake when buying water pipe of the Weissbaum kind. Largest pipe works in the west.

WEISSBAUM PIPE WORKS, 160 Eleventh St., San Francisco.

THE MARKETS

San Francisco, Mar. 25, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The wheat market remains very firm, both locally and in the north, and arrivals here are limited, while northern stocks are closely held. California Club is nearly cleaned up, and it is hard to get Northern Bluestem at the quoted figures.

California Club, ct. \$1.62½ @ 1.65
Forty-fold 1.65 @ 1.67½
Northern Club 1.62½ @ 1.65
Northern Bluestem ... 1.75 @ 1.77½
Northern Red 1.62½ @ 1.70

BAPLEY.

The firmness apparent for a couple of weeks has given way to an easier feeling, and the spot prices are a little lower, though still higher than at the first of the month. There is little demand in a speculative way, though the quotations have been shaded.

Brewing and Shipping.. Nominal
Choice Feed, per ct. \$1.15 @ 1.17½
Common Feed 1.10 @ 1.12½

OATS.

There is a rather easy feeling in oats, which now find little demand, though there is some inquiry for white feed. Red seed stock is nominal, as there is no further demand.

Red Feed \$1.50 @ 1.60
Gray Nominal
White 1.25 @ 1.30
Black Seed Nominal

CORN.

There is nothing new in the local situation, prices standing as before, with light arrivals and a very moderate demand.

California Yellow Nominal
Eastern Yellow \$1.77½ @ 1.82½
Eastern White Nominal
Egyptian 1.75 @ 1.85
Milo Maize 1.75 @ 1.80

RYE.

There is hardly enough trading to establish values, but offerings are held steadily at the old quotations.

Rye, per ct. \$1.45 @ 1.50

BEANS.

The past week has brought more change in the bean situation than has been observed for some time previous. The spring demand has been developing rapidly, and large inquiries have come in from many consuming markets, which have little stock left. This movement has caused quite a rapid decrease in local stocks, which have not been especially large, and prices have been marked up very sharply on practically all descriptions. Arrivals here are light, stocks of all lines in the country being pretty well sold out, and all present indications favor continued activity and firmness.

(On wharf.)

Bayos, per ct. \$6.00 @ 6.20
Blackeyes 4.75 @ 5.00
Cranberry Beans 4.50 @ 5.00
Horse Beans 1.90 @ 2.15
Small Whites 5.50 @ 5.75
Large Whites 3.75 @ 4.00
Limas 6.25 @ 6.50
Pea 4.00 @ 4.25
Pink 3.75 @ 4.00
Red Kidneys 5.75 @ 6.00
Mexican Red 4.80 @ 5.00

SEEDS.

The most important business in the lines quoted is over for the present, though there is a moderate amount of business under way, and prices are held on the same basis as for some time past.

Alfalfa 12½ @ 15 c
Broomcorn seed, per ton.. Nominal
Brown Mustard, per lb. ... 3¾ c
Canary 7 @ 7½ c
Hemp 2½ @ 3 c
Millet 2½ @ 2¾ c
Timothy 7½ @ 8 c
Yellow Mustard Nominal

FLOUR.

Prices are firm, but show no further change. Local business has been fairly active, but there is not much doing in the shipping trade.

Cal. Family Extras ... \$5.80 @ 6.20

Bakers' Extras 4.80 @ 5.40
Superfine 3.90 @ 4.20

Hay and Feedstuffs.

HAY.

Arrivals in this market continue rather heavy in comparison with the demand, which is very light, as it has been for some time past, though the cheapness of feed and better business conditions are expected to bring a heavier consumption before long. Quite a bit of hay is still being consigned to this market by growers, and this is disposed of at irregular values, as there is difficulty in cleaning it up. Dealers, however, do not look for any further general decline. The lack of spring rain has not been very favorable to the growing crops, but so far there is no serious apprehension.

No. 1 Wheat, or Wheat
and Oats \$13.50 @ 14.50
do No. 2 11.00 @ 13.00
Lower grades 9.00 @ 11.00
Tame Oats 10.00 @ 13.00
Wild Oats 9.00 @ 11.50
Alfalfa 8.00 @ 11.00
Stock Hay 7.00 @ 9.00
Straw, per bale 65 @ 90c

FEEDSTUFFS.

Supplies of bran are still light, and as the demand keeps up fairly well there has been another advance of \$1 per ton. Rolled barley has eased off a little, but is not quotably lower, while other lines are steady and rather quiet at the old figures.

Alfalfa Meal, per ton. \$18.00 @ 19.00
Bran, per ton 25.50 @ 26.50
Oilcake Meal 34.00 @ 35.00
Cocoanut Cake or Meal.. 27.00 @ 28.00
Cracked Corn 41.00 @ 42.00
Middlings 33.00 @ 34.00
Rolled Barley 25.00 @ 26.00
Rolled Oats 29.50 @ 30.50
Shorts 26.00 @ 27.00

Garden Truck.

VEGETABLES.

Another sharp decline is noted in asparagus, as shipments to this market have been extremely large and include a large amount of immature stock, as growers have been rushing their supplies to market in anticipation of the decline. The less desirable offerings have been forced out at 25c per box. The canners are now buying freely, however, and good stock has been readily disposed of at 50c to \$1. Ordinary offerings of rhubarb are lower, while choice lots bring the former prices, and the best of the celery is higher than last week. Lettuce is higher, though the supplies have not as a rule been very attractive. Mexican tomatoes are lower at the inside figure, while bell peppers are a little higher. Peas are coming in freely, and with most offerings of poor quality the prices have been low.

Cabbage, per ct. \$1.00 @ 1.25
Cauliflower, dozen 40 @ 70c
Green Peppers, lb. 4 @ 9c
Carrots, per sack 35 @ 50c
Green Peas, lb. 2 @ 4c
Tomatoes, Mexican, box.. 1.75 @ 2.50
Sprouts, lb. 4 @ 6c
Celery, large, crate 1.50 @ 2.50
Rhubarb, box 75c @ 1.75
Lettuce, crate 1.00 @ 1.75
Mushrooms, lb. 5 @ 10c
Asparagus, box 25c @ 1.00

POTATOES, ONIONS, ETC.

Oregon and local potatoes are moving in about the usual way at the old prices, while some potatoes from Washington have been offered about on a parity with the cheaper local stock. Onions are scarce, with Oregon stock higher, and some Australian onions are offered at \$4.25, though there is not much demand at this figure.

Potatoes:
River Whites 75c @ 1.05
Sweet Potatoes, per ct. ... 1.25 @ 1.60
Oregon Burbanks 85c @ 1.25
Onions: Oregon 3.75 @ 4.00
Bermuda, crate 2.00 @ 2.50
Garlic, per lb. 7 @ 12c
New Potatoes, lb. 1½ @ 3c

Dairy Produce.

POULTRY.

California chickens are still coming in freely, but with only moderate ship-

ments from the East, and an active demand, the market is cleaning up fairly well from day to day. Small hens are slightly lower, but values in other lines are well maintained.

Large Broilers 25 @ 30 c
Small Broilers, per lb. ... 30 @ 35 c
Fryers, per lb. 24 @ 26 c
Hens, extra, per lb. 19 @ 20 c
Hens, large, per lb. 19 @ 20 c
Small Hens, per lb. 19 @ 20 c
Young Roosters, per lb. ... 20 @ 21 c
Squabs, per doz. \$ 2.00 @ 2.25
Geese, per pair 2.50 @ 3.50
Ducks, doz. 6.50 @ 8.00
Turkeys, live, per lb. ... 20 @ 21 c
do dressed, choice.... 23 @ 25 c

BUTTER.

The market is well supplied with both local and imported butter, keeping prices far below those of last year, though the general range for this week has been a little higher than for last.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras ... 23½ 23 22½ 22½ 22½
Prime
Firsts ... 22½ 22½ 22½ 22 22 22
Firsts ... 22 22 22 22 22 22

EGGS.

Large shipments of Chinese eggs continue to arrive, but according to dealers these are replacing Eastern rather than local stock, and have not interfered with the storage movement. With larger offerings and little shipping business, prices show a further decline, but compare favorably with those of last year.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras ... 21 20½ 20 20 19½ 19½
Firsts ... 18½ 18 18 18 18 18

Selected
Pullets... 19 18 17½ 18 17½ 17½

CHEESE.

Flats have been offered freely for the last few days, and are 1c lower, while Y. A.'s show a slight advance. Monterey cheese is weak, with heavy offerings.

Fancy California Flats, per lb. ... 15½ c
New Young Americas, fancy... 19½ c
Monterey Cheese 14 @ 15 c

Deciduous Fruits.

Shipments of strawberries from both Watsonville and Los Angeles are now coming in with some regularity and find a good market, though prices are naturally lower than at the start. Apples are very quiet, but with light supplies prices are well maintained.

Strawberries:
Southern, crate \$ 1.00 @ 1.50
Longworths, drawer ... 60c @ 1.00
Apples: Newtown Pippins. \$ 1.50 @ 2.00
Hoover 1.00 @ 1.50
Oregon Spitzenbergs .. 1.40 @ 2.50
Oregon Ben Davis..... 1.65 @ 1.85

Dried Fruits.

There is not much new to report in this line. The general advance in prices has brought out comparatively little in the way of offerings from the country, as growers are well cleaned up on everything but peaches, and in view of the increasing firmness are in no hurry to sell. Reports from all parts of the country indicate an active consuming demand in practically all lines, with little stock in dealers' hands; and while the trade does not care to buy heavily, there is a steady run of inquiries for current delivery. As there is now a very evident scarcity of dried fruits in general, values are firmly maintained and tend to advance. Raisins are getting more attention than for some time past, and the movement both from Fresno and from Eastern distributing houses has been large. Prunes are in strong demand with very light supplies, and peaches are moving steadily, with prospects of a more active demand within the next two months, which should take most of the present stock off the market. Figs are scarce, and find more demand than for some time. The New York Journal of Commerce says:

"The consuming demand for all varieties of dried fruits is rather better than the average for this season, and as desirable stocks are getting into small compass, the market has a firm tone, and the trend of prices is upward. Bag figs are coming in for a good deal of attention, and prices on

both imported and California stock show an upward tendency.

"There is still a free movement in spot prunes ex warehouse New York at full quoted prices, but purchases are regulated by actual current necessities of consumers, and no important business can be reported. The market has a strong tone, and the tendency of prices is upward. Comparatively little interest is shown by the local trade in offerings for prompt shipment from the Coast. Nothing seems to be available in the more popular sizes on less than a 7c f.o.b. Coast four-size bulk basis.

"Peaches on the spot and for early forward shipment are getting a little more attention here, but, as the best consuming season in this part of the country does not start in until late spring or early summer, the movement is still comparatively light. Advances from the Coast reflect a firmer feeling in the primary market, but there has been no quotable advance in prices as yet. Apricots are in light supply here, and little stock is offered for prompt shipment from the Coast. The demand from the local trade is not urgent. Some speculative offerings of 1914 crop are being made at about 10c for choice Royals, 10½c for extra choice, and 11½c for fancy f.o.b. Coast for August-September shipment. Buyers here do not seem to be disposed to place orders at these figures. Raisins of all kinds are firm on increasing demand."

Evap. Apples, 1913 8 @ 9 c
Apricots, 1913 13 @ 15 c
Figs: White Nominal
Black Nominal
Calimyrna 4½ c
Prunes, 4-size basis..... 7 @ 7½ c
Peaches 4 @ 4½ c
Pears 9 @ 12 c
Raisins (in sweatbox):
Loose Muscatels 4
Thompson Seedless 5 @ 5½ c
Seedless Sultanias 4¼ @ 4½ c

Citrus Fruits.

The Eastern auction markets show a slightly lower price for oranges, caused largely by the large amount of fruit offered. Last Monday there was sold on the New York market 38 cars, Boston 26 cars, Cincinnati 5 cars, Cleveland 12 cars, Pittsburgh 18 cars, and as large proportionate numbers at Chicago, St. Louis, and other auction points. The fine weather in California during the past three weeks has given the growers the opportunity to get all the oranges out that the packing houses could handle, and the shipments have been going forward at the rate of nearly 300 cars per day.

At New York on Monday, March 23, navels averaged from \$1.40 up to \$2.75 per box. Bloods brought from \$1.75 to \$2.10. Tangerines, halves, \$1.10 to \$1.80. At Boston the prices on navels averaged from \$1.40 to \$2.75 per box. Bloods and tangerines about the same as New York. The Cleveland auction showed prices equal to the above, while at Philadelphia the auction averaged from \$1.35 to \$2.35 per box.

Florida oranges on the Cincinnati and Cleveland auctions brought from \$2.10 to \$2.25 per box.

Lemons are unchanged, bringing around \$3 and \$3.50 per box.

Oranges are moving fairly well on the San Francisco market, and with supplies down to about the normal basis, prices show a little more firmness. Quotations in general are unchanged, though a few fancy lots are being sold at a premium. Fancy lemons are higher, and grapefruit is scarce at the moment, causing a sharp advance.

Oranges: Navels \$ 1.00 @ 2.25
Tangerines, crate 75 @ 1.25
Grapefruit, seedless 2.50 @ 3.50
Lemons 1.75 @ 4.00
Limes 5.50 @ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Prices are nominal, as there is nothing of any consequence offered in the country, and the demand at this season is limited.

Almonds:
Nonpareils 19 c
I X L 18½ c
Ne Plus Ultra 17½ c
Drakes 15½ c

Languedoc	15 1/2
Hardshells	7
Walnuts, new crop:	
No. 1 Softshell	16
No. 1 Hardshell	15 1/2
Budded	19
No. 2	11 1/2

HONEY.

Most grades are quoted a little lower and the local market is easy. There is no demand worth mentioning now, and some holders are well supplied, while prospects are for a large and early crop.

Comb, white	14 @ 15 c
Amber	10 @ 12 c
Dark	9 @ 10 c
Extracted: White	7 @ 8 c
Amber	6 1/2 c
Off Grades	3 1/2 @ 5 c

BEESWAX.

Prices for desirable stock are a little higher, as recent shipments have left very little in this market, and there is some demand from other markets.

Light	30 @ 32 c
Dark	28 @ 29 c

HOPS.

There has not been much business in old stock of late, though a few sales have been made within the range quoted, some Sonoma stock bringing 17c. Some business has been done in Oregon at 18c.

1913 crop	15 @ 17 c
1914 crop	14 @ 16 c

Live Stock.

A good many grass-fed cattle are coming in at present, and bring 1/2 to 3/4c less than the regular quotations. Otherwise prices stand as before, with conditions about the same as last week.

Steers: No. 1	7 1/4 @ 7 1/2 c
No. 2	7 @ 7 1/4 c
Cows and Heifers: No. 1	6 1/4 @ 6 1/2 c
No. 2	5 3/4 @ 6 c
Bulls and Stags	2 1/2 @ 5 c
(Grass-fed cattle, 1/4 @ 1/2c less.)	
Calves: Light	8 1/2 @ 9 c
Medium	8 @ 8 1/2 c
Heavy	6 1/2 @ 7 1/2 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs.	8 1/2 @ 9 c
100 to 150 lbs.	8 1/4 @ 8 3/4 c
Prime Wethers	5 1/2 @ 5 3/4 c
Ewes	4 1/2 @ 5 c
Yearling Lambs	6 1/4 @ 6 3/4 c
Milk Lambs	7 @ 7 1/2 c

DRESSED MEATS.

Steers	12 @ 12 1/2 c
Heifers	11 1/2 @ 12 c
Veal, large	12 @ 13 c
Small	13 1/2 @ 14 1/2 c
Mutton: Wethers	11 @ 11 1/2 c
Ewes	10 @ 10 1/2 c
Suckling Lambs	15 @ 16 c
Dressed Hogs	13 1/2 @ 14 c

WOOL.

So far little has been done in this State, aside from some sales in the San Joaquin district at the range

quoted. It is expected, however, that values on the northern clips will be established within a short time. Dates have been set for the Oregon wool sales, and some large sales have been made in Washington.

Spring Clips:

San Joaquin	10 @ 13c
-------------------	----------

HIDES.

Heavy Steers, over 50 lbs	15 c
Medium	14 1/2 c
Light Steers, under 48 lbs	14 1/2 c
Heavy Cows, over 50 lbs	14 1/2 c
Light Cows, 30 to 50 lbs.	13 1/2 @ 14 1/2 c
Kop	17 1/2 @ 18 1/2 c
Veal	17 1/2 @ 18 1/2 c
Calf	17 1/2 @ 18 1/2 c
Dry Hides	
Dry Kip, 10 to 15	24 1/2 @ 25 1/2 c
Dry Veal, 5 to 10	29 1/2 c
Dry Calf, 7 down	29 1/2 c

HORSES.

The results of last week's sale were fairly satisfactory, and the appearance of better conditions in this market has brought in larger offerings this week than for some time past. The stock consists mostly of work horses of light and medium weights, and has received considerable interest from outside buyers. A large lot of stage horses will be offered here next week.

Heavy drafters, 1700 lbs. and over	\$275 @ 325
Light drafters, 1500 to 1650	225 @ 250
Chunks, 1350 to 1500	200 @ 225
Western Horses, 1250 to 1350	150 @ 200
Delivery Horses, 1050 to 1250	100 @ 125
Desirable Farm Mares	75 @ 100

MULES.

1200 lbs.	\$200 @ 250
1000 lbs.	150 @ 200
800 lbs.	125 @ 175
500 lbs.	75 @ 125

PUBLISHER'S DEPARTMENT.

Another new book on a popular subject has just reached our desk, from Ginn & Co., of Boston, publishers. "Play and Recreation for the Open Country," by Henry S. Curtis, contains 265 pages, well illustrated and bound in cloth. This book is an attempt to show some ways in which the adventure and romance and social co-operation which the country had in the days of the pioneer, but which it has so largely lost, can be brought back to country life. It contains many helpful suggestions for the organization of recreation in the rural home, in the rural school, and in the rural community. It is intended for parents, teachers, and other students of rural life. Price \$1.25. Address the publishers.

Here is what one of the buyers of our new book, "One Thousand Questions in California Agriculture Answered," thinks of it: "Your book, 'One Thousand Questions,' at hand, and many thanks. It is the greatest book of the kind I ever saw, and am more than pleased with it." We want every reader of the RURAL PRESS to have a copy in his library. Knowing that it will help make the farm more successful. The price of \$1.50 per copy is but a fraction of the worth of the book. To every subscriber we would like to send our special offer. Write us for it.

PLANT AN ORANGE TREE IN YOUR BACK YARD.

Roeding & Wood Nursery Co. of Los Angeles reaped quite a little benefit from the Orange Day celebration and likewise created a deal of business for other nurseries by the suggestion which they made to "Plant an orange tree in your front or back yard on Orange Day." The suggestion was well taken up by the public in general and the Los Angeles newspapers gave quite a little publicity to it. Aside from the matter of sentiment, it would seem that every Californian should have at least one orange tree growing in his front or back yard, not only for the sake of the fruit that it will yield and the pleasure in being able to pick oranges from your own tree, but also from an ornamental standpoint. There seems to be a decided tendency within the past few weeks toward a greater planting of citrus trees. The Roeding

& Wood Nursery Co. are exceptionally well stocked this season and are doing a very large business.

TO STUDY THE MEAT SITUATION.

The Secretary of Agriculture has announced the appointment of a committee "to conduct a general inquiry into the various factors which have brought about the present unsatisfactory conditions with respect to meat production in the United States, especially in reference to beef, with a view to suggesting possible methods for improvement."

The work of the committee will be centered largely on the study of economic questions involved in the production, transportation, slaughter and marketing of meat. As the first step the committee will investigate carefully the changes within the last two or three decades which have in-

creased cost of production, and the centralizing of the meat industry. Among the important considerations to be gone into will be the taking up of the public lands, the effect of the capacity of the range, especially on the remaining public lands and forest reserves with a view to suggesting changes in the laws to make the public lands of greater use in cattle raising. The committee also will give special attention to the economic changes in meat production and distribution brought about through the centralizing of slaughtering and meat preparations in large packing establishments, and the changes in transportation and similar matters which have resulted from this centralization and other causes, the economic possibility of communal and community effort in cattle raising and the advantages of establishing local or municipal abattoirs will also be investigated.

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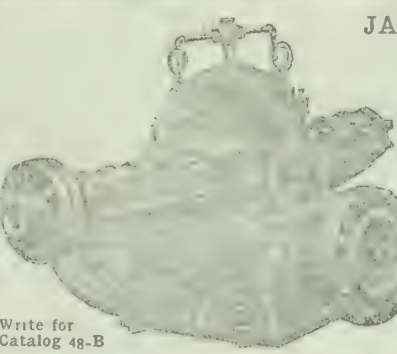
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Asst. Pass. Traffic Manager

San Francisco, Cal.

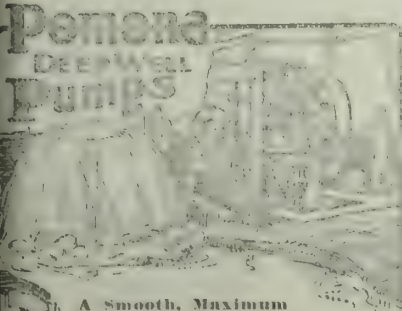
F. A. WADLEIGH

Passenger Traffic Manager

Denver, Colo.

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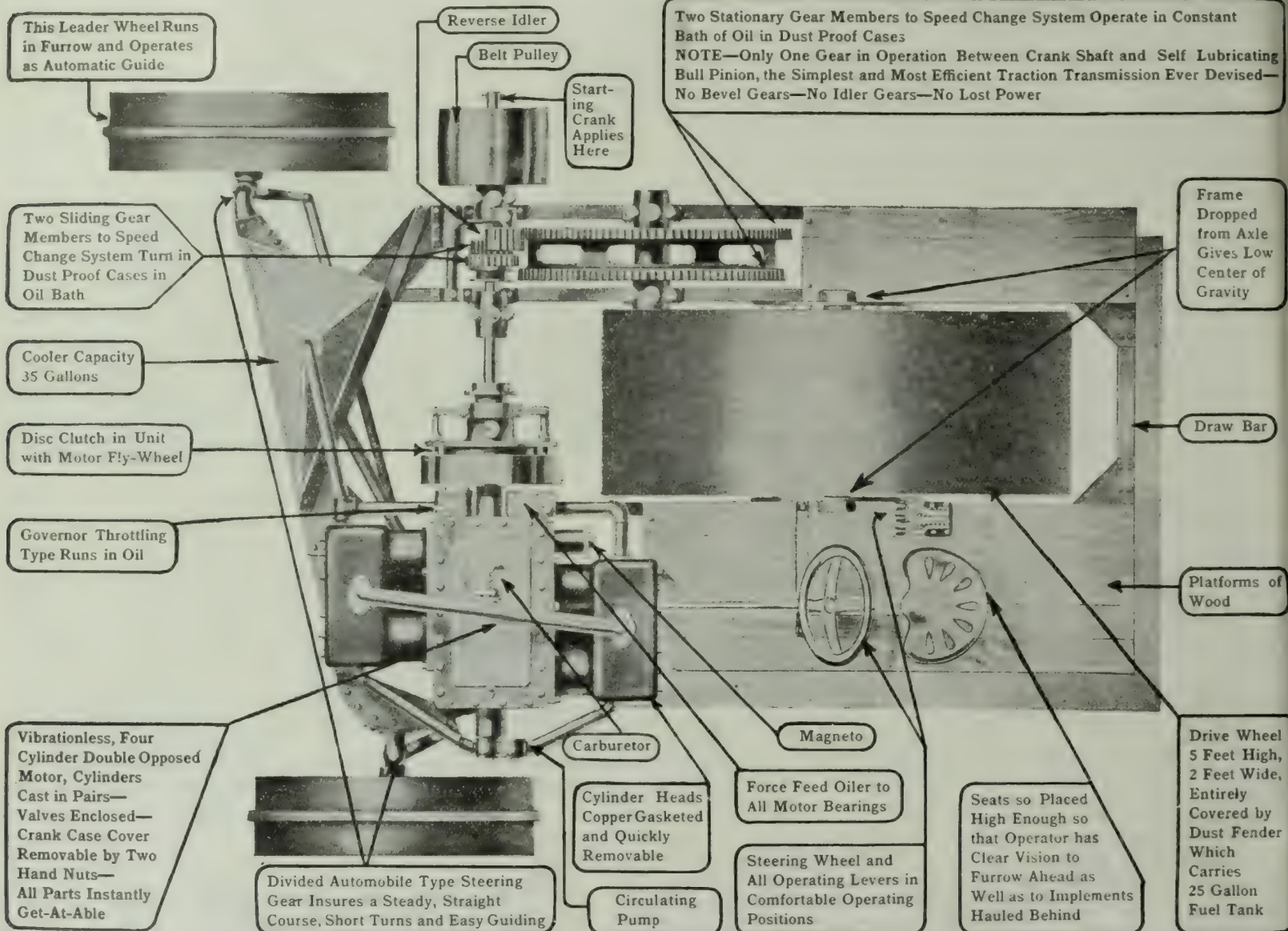
2nd.—A straight line transmission to the traction (no troublesome power-losing bevel gears). All transmission gears solid steel, spur type, turn in oil in dust proof cases (a combination not found in tractors selling under \$3,000.00).

3rd.—Only one gear in traction work intermediate of crank pinion and bull pinion (the fewest operative gears on any tractor of any make). Positively the simplest and most efficient gas traction ever devised.

4th.—Seven gears only in entire transmission line—provide two forward gear shifts and reverse. (The Simplex provides change speeds yet notwithstanding it has fewer gears than any tractor ever designed even of the single speed type.)

5th.—Speed changes provide a radius of speed of from 1 to 5 miles an hour (a widely advertised feature of tractors costing four times as much).

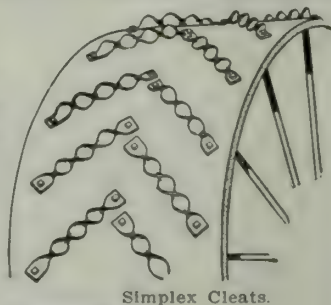
6th.—Anti-friction, self-oiling roller bull pinion with replaceable teeth and laminated bull gear (an exclusive feature).

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| 2—One or two seeders. | 7—It runs the threshing machine. | 13—It costs one-third of animal power. |
| 3—One or two binders. | 8—It runs the hay presses. | 14—It works at ½ expense of horse power. |
| 4—It harrows, discs and pulls packers or rollers. | 9—It cuts and elevates ensilage. | 15—And any other odd job around the farm. |
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| | 11—It shells corn. | |

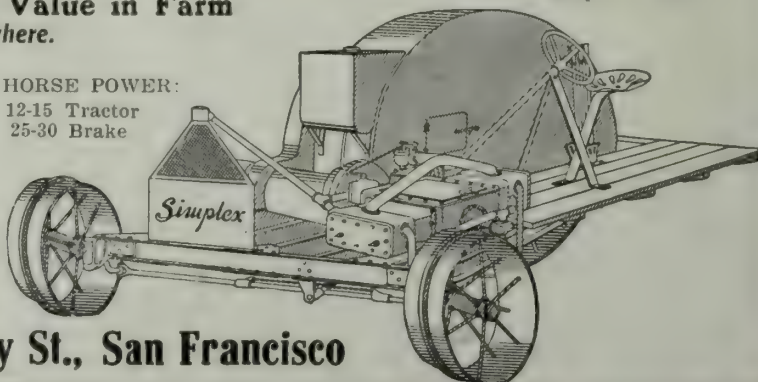
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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 14.

SAN FRANCISCO, SATURDAY, APRIL 4, 1914.

State Library

Forty-Fourth Year.

Wool or Mutton Sheep, Which?

[Written for the PACIFIC RURAL PRESS by PAUL PARKER.]

Sheepmen in various sections of the West are troubled over what sheep to raise. Wool or mutton? The results of the last few years have shown that it must be one or the other. There can be no half-way business about it. Those men who have been alternating with Merino and Shropshire bucks on Merino ewes every other year have not found the game as profitable as it might be. Neither the wool nor the meat was up to standard. Although the Government and many of the agricultural schools are experimenting along these lines to get a combined wool and mutton sheep, the results so far have not been satisfactory.

In the meantime, many California sheepmen have solved the problem by drifting from the wool to the mutton sheep.

Mutton Breeds for Mutton.

As this drift seems so sweeping, I went to one of the leading butchering firms in San Francisco for a little light on the subject. They gave it to me by showing their books; and "figgers don't lie." Two bands of sheep from Placer county had been shipped them. The stock averaged the same in age, about 4½ months, and they all had the same opportunities as to water, feed, and climate. These two lots were killed with the following results: One lot dressed 24.7 lbs. and the farmer received \$2.73 for them; the other bunch averaged 35.7 and sold for \$4.46. When the rancher whose lambs averaged but \$2.73 heard of the returns on his neighbor's stock—\$1.73 difference—he grabbed the next train for San Francisco and asked for an explanation. It was this: His lambs were outweighed on an average of 11 pounds apiece, and besides, the meat was not of such good quality. His lambs were wool or Merino stock, while his neighbor's were "black face" or Shropshire. It was a question of breed—a wool type competing with a mutton type. The rancher saw the point immediately, and announced his intention of raising mutton sheep from then on. He made arrangements to displace his wool bucks and breed Shropshires to his Spanish Merino ewes. Next

season he expects to have 8000 lambs which will average closer to 35 pounds than to 24.

Sectional Differences in Wool Profits.—Then, to get the wool side of the question, I went to one of the best versed and largest wool buyers in California and obtained the following data. Of necessity, I have been limited to average prices and yields in the various localities. Some individuals in the districts discussed no doubt received more, but there are others that I know received less. On account of

the decided variation in soil and climatic conditions in California, the wool varies with it, and I have taken sections as divided by the wool buyers.

The 'southern wool,' as it is called, grows in that section from Stockton south to the Tehachapi pass, and as a rule brings the lowest price. The sheep of this district are mostly Merinos and, on account of the low price for the wool, many growers have been trying to raise lambs for the market. They do this by using Merino and Shropshire bucks alternating years, but only in certain spots has this been a success. The spring clip in this section averages five pounds and the price about ten cents. The fall clip, four pounds at seven cents. This makes a total average clip of nine pounds per sheep with a return of 78 cents. Out of this comes 8 cents for the shearer and 3 cents for the bag and twine, making 11 cents per shearing, or 22 cents for the year. This leaves the sheepman 56 cents net per animal.

The 'middle counties wool' comes from the north of Stockton to Placer and Sacramento counties. The sheep here are mostly Spanish and French Merinos. The spring clip averages 4½ pounds at 14 cents and the fall yields 4 pounds at

9 cents. This makes a total of 99 cents per animal, which minus the shearing expenses of 22 cents (I have taken 11 cents as general average shearing expenses; it may vary a few cents in the different sections) leaves a net of 77 cents for the wool.

The 'northern wool' comes from between Marysville and Red Bluff, and embraces Butte, Tehama, Glenn, Colusa, Yuba, Sutter, and northern Placer counties. The sheep of this section, while of



California Mutton Sheep—Above, at the Fair; Below, on Bishop's Ranch at San Ramon; Center, Lambs From Woodland, Average 55 Lbs., Sold at 7c. Per Lb.

(Continued on Page 130)

Pacific Rural Press

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E. J. WICKSON - Editor
FRANK HONEYWELL - Manager
W. H. SCHRADER - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Mar. 31, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Past Week. Maximum.	Minimum.
Eureka.....	3.05	31.86	38.52	60	34
Red Bluff.....	.49	30.16	21.40	58	44
Sacramento..	.58	18.63	16.96	62	40
S. Francisco..	1.07	27.95	19.47	60	44
San Jose.....	.86	18.34	14.62	64	34
Fresno.....	.24	10.21	8.24	66	40
Independ'ce	.00	11.44	8.13	60	28
San L. Obispo	1.23	30.23	18.06	62	34
Los Angeles..	.56	22.64	13.96	64	44
San Diego.....	.32	8.86	8.83	66	48

The Week.

The showers which began at the opening of this week and are falling widely over the State are bringing growing conditions everywhere into their best estate. Very widely, as the above rainfall table shows, ample water has fallen and it has penetrated deeply, giving better subsoil moisture than has been had for two years. The drouth of early March robbed the surface soil and in some cases has delayed tillage, but all this has found compensation in this week's weather, and it comes quite early enough to advance fall and winter sowings and to facilitate ground-handling for summer crops. The outlook is therefore very fine and occasional showers are all that will be required to insure realization. The season thus promises to be just what is most desirable for the best preparation for the World's Fair. We should gather as good exhibits in all parts of the State as have ever been produced and the adornment of California for the function for which she has been brought forth by nature and developed by man, to-wit, her position as the queenly hostess of the world, will be realized under most favoring conditions. Let everyone set free his thought to appreciate his personal duty and opportunity toward that end and do his best to be true to both.

That 8-Hour Day in Farming.

A reader writes thus: "You do not seem to like an 8-hour day for farming: what are you going to do about it." The writer does not disclose his own attitude toward the question, and we thank him for that, because we are free to answer, along all lines from grave to gay, as the phases of the matter suggest themselves to us.

First, then, seriously: we are going to vote against that constitutional amendment prepar-

ing for the enactment of a general 8-hour labor day, and strongly urge every other voter to do so. Altogether apart from its relations to farming, about which we may speak later, the proposed law is an invasion of the personal rights of an American citizen, for the declaration and realization of which this country was projected and established and the maintenance of which has been at great cost of life and property. We count it among the inalienable rights of our citizenship that a man should have liberty to buy as many hours of labor in a day as another man is willing to sell to him, at a price upon which they two shall agree. We count it an inalienable right also that a man shall have liberty to sell as many hours labor in a day as he can, at a price which suits him. These rights have been traversed, it is true, by organizations which deny both the purchaser and seller of labor the exercise of their constitutional rights, but that does not vitiate the principle which has been contravened: it is this proposed amendment which aims to destroy that inalienable right, which various tolerated policies among employers and laborers have tarnished but not obliterated. It is time now to stand for that right and to defend it. Therefore we shall vote against the amendment which aims to expurgate the constitution so that neither labor-buyers nor labor-sellers shall have rights to which they were born, or which they have acquired by adoption, in the family of American citizenship.

State Employment Different from Individual Employment

But, it may be urged, we have a law prescribing an 8-hour law and a minimum wage which the State as an employer must observe; why should not individual employers or laborers be similarly bound? The answer is very simple. The State is merely an aggregation of individuals, each of whom exercises his liberty on any proposition by the act of voting—thereby merging in the State all inalienable rights for public purposes. Thus the State acquires from individuals its right to determine hours and price of labor on all public work. Thus, through their voting power, either direct or representative, those who have labor to buy or labor to sell, for public work, make a contract, in the formation of which both have participated—thus exercising, and not destroying, their individual rights by State enactment. There is therefore, no analogy between the practice of a State for its own purposes and the proposed sweeping away of constitutional barriers which protect individual citizens in the exercise of their inalienable rights to buy or to sell labor, or any other wholesome commodity or honorable service, as they deem best in their exercise of liberty, or pursuit of happiness which does not infringe upon the rights of others in the same exercise or pursuit. We are not objecting to what the State has done in its own policy of employment: we are disposed rather to regard it as beneficent in its influence toward setting up a standard of service and reward by which individuals may measure, and adopt or depart from, according to conditions under which each of them may buy or sell labor. But while this may be conceded, it affords no precedent whatever for legal enactment to restrain individual liberty, the doing of which is arbitrary, tyrannical and audacious contravention of the rights of American citizenship.

The Rankest Kind of Class Legislation.

Let the reader notice that this amendment to the constitution of California, which proposes to sweep from that document the protection of the citizen in the pursuit of his own honorable business, is itself, in its very terms, in open conflict with the constitution which it proposes to amend. Our constitution strenuously forbids "class legislation," yet here is an amendment, which people are asked to tolerate, which criminalizes and penalizes employers for transactions which they cannot possibly perform without active participation in their act by another class, viz.: the laborers whom they employ. We hold that this proposed amendment, which is promoted by those who like to figure in the public eye as leaders of labor, is just as great an infringement of the rights of the laborer as it is of the rights of the employer. We believe their real rights are identical and both should be free agents in their mutual transactions, both for economic and patriotic reasons. But here is a movement toward a law which shall punish one for the transactions of both. The amendment does not say, as it might, it shall be a misdemeanor to do thus and so, but it says the employer, or his agent, who shall do thus and so, shall be guilty of a misdemeanor, etc. The motive is clear enough: it is another attempt on the part of the self-constituted, tyrant-killing, leaders of labor to throw employers into the transgressor class so that they may still have occupation, to wit: stalking dragons of their own creation. Thus they constitute a class in their proposed amendment and offend the Constitution of California by the terms of it. But, of course, they will claim that the transgression is alleged against an individual employer. That claim might be valid if the amendment should also say that any laborer who worked more than eight hours in a day should be jailed or fined or both. They do not provide for that; they have constituted a class, and, under the constitution of the State, their contention is vain.

What Are We Going to Do About It?

We seem to be having our own way so far; we do not seem to have even a doubt of our own wisdom, and it is becoming a little heavy and monotonous, perhaps. It occurs to us now that possibly our questioner who set fire to this discussion in the first column, is taking it for granted that the 8-hour law will be enacted all right and intends to ask us how we propose to run our farm under it. Well, we have thought of that, too, and possibly we should counsel together along that line. We have figured a little on running the farm with two shifts, at half the current day-wage to each, of course; for the life of us we cannot figure out any more labor money than the crops are now providing. This will work perhaps, until these dragon-stalkers spring their next gun, which will be, of course, for a minimum wage for eight hours. When that comes we are figuring on giving the ranch to the foreman on condition that he give us his job, under the terms of the new law. We doubt if he will be fool enough to take it, but we shall try it on him. He might like to get the chance to go to jail, which would be denied to us. It is a distinction to which farmers never have had a fair chance hitherto. If, however, we cannot give away the ranch, we shall stand up to the ordeal heroically. We shall advance the rates in the

unk-house to the Del Monte schedule, and, if the State does not go dry, we shall open a bar and a pedro parlor in a boiler-plate building and see if we cannot chalk up enough on the wall to balance the pay-roll, instead of having that sort of frenzied finance done in the road-house at the corners. Of course the men must have some entertainment to kill time with, and recreation-grounds for light games like football may be necessary to keep them from getting heavy enough to break down all the plow-eats.

It is, however, quite possible that these home amusements will lose their charm and the men may take to the city hotels which are only about ten miles away. In such a case we shall try to organize a two-shift day on a different basis. We shall have one shift of captains of labor and another shift of roustabouts. The latter we shall try to collect from city kids whose parents wish them to learn farming and who will work for their board and such practical instruction as we can give them while at their work. The roustabouts will rise at four, do all the chores, hook up the teams and get the tools all ready so that when the captains of labor come in from the city in their automobiles, all they will have to do will be to walk around the team, cuss a little, take the reins and start off at eight o'clock sharp. At that moment the kids will get breakfast and go to bed, getting out again in time to take the teams and care for them as they come in at noon. At 12:10 a five-course dinner will be served in the bunk-house for the captains at \$1 per head, and what they leave will be fed to the kids, as soon as they get the teams ready for the captains to start in again at 1 o'clock. After dinner, the kids will have the pedro-parlor and the recreation grounds until the teams come in again at five; the kids starting in then on their second four hours, caring for the teams, doing the chores, etc., while the captains will motor back to town in time to dress for dinner. In this scheme we are, of course, building heavily upon the help of the captains in maintaining discipline among the roustabouts by scorning undue familiarity with them and by filling them with admiration for their mastery of high teamster-art—such, for instance, as their unfailing success in firing a rock at the off-leader so as to invariably hit him on the rump instead of knocking his eye out. By such achievement of skill and by their social attitude we count upon them as an ever-acting inspiration to progress among the roustabouts so that the race of master-workmen in agriculture shall not become extinct.

One Meal a Day for Farm-Owners.

Lest this outline of policy may not be too hastily approved by our readers, we must frankly admit that one item of farm financing under an eight-hour law still refuses to dissolve under our fervid thinking. We do not see how the farm owner will get more than one meal a day. This may not matter much, because we do not see how he will have money enough left to buy stuff for two, but still it bothers us because we cannot make the scheme even theoretically complete. The kitchen or cook-house gang will be under the same law, and though the owner might bring himself easily to the self-sacrifice of going to jail for inducing a lordly teamster to work overtime, he would certainly draw the line at incarceration for the sake of a dirty dish-washer. He

would probably tighten his belt to the one-meal hole rather than pay such a price for the second meal. Nor can he compound a felony by letting his wife hire the cooks—much as he might think she needed a rest cure at the county seat. Figure it anyway we can, we cannot calculate how we can get the customary number of meals without working the kitchen in two shifts, and that seems simply reckless in view of the wrecks of domestic comfort and economics which one-shift cooking outfits have hitherto achieved. But ignoring history, it is a mathematical absurdity to expect three meals within eight hours and still leave the eaters eight hours to work. Begin the cook's eight hours whenever you choose, one meal must be lost at whichever end of the period you choose. Of course you might possibly hire the cook and his squad not to count the hours they were taking their afternoon siesta on the potato sacks, but doubtless the walking-delegate would count them still in continuous service and order them out before they could fry the cat-fish for supper. And, the worse luck to it, this culinary problem seems to vitiate all our other calculations because it would knock out the scheme for recovering the wages through the cook-house charges and it would seriously hamper the bar business by making it impossible to properly serve those who develop thirst before breakfast.

If, then, our questioner intends to secure information as to what we are going to do about it if the law should be enacted, we must confess that we do not know. We are unable to figure out how we can run a farm or a dwelling house on an eight-hour day for laborers, and that is one reason why we do not propose to try, if there is any virtue in working and voting against the initiative—on which, we are fair enough to believe, that all engaged in its promotion desire to secure a clear and definite expression of the public will.

Queries and Replies.

Querists must submit full names and addresses.

Buckwheat for Fertilizer.

To the Editor: Which is the best way to keep orange trees fertilized—buy manure or grow buckwheat and disk it in when ripe? The cost of water to irrigate is 43 cents for 75 inches per hour. The soil is sandy loam. Is it advisable to let the trees bear at three years old?—N. E. A., Anaheim.

You had better buy manure and plow it in next fall after the rains. It is too late now to work it into a sandy soil. If you wish to fertilize now, buy commercial fertilizers. Buckwheat can only be grown in the summer, and you are not likely to get enough growth to pay for the water, for the plant does not like dry heat. It is plowed in green, not after seeding. It is hardly grown at all in this State. It is well not to let so young a tree bear too much fruit.

Apricot Blossom and Fruit Drop.

To the Editor: My Blenheim apricots have bloomed heavily and set fruit well, but half of them have dropped. The fruit is rotted just where the dried-up blossom clings to it. Now we have had considerable fog in the morning up till a week ago. My idea is that the dampness caused by the fog, and the hot sun immediately thereafter, may have caused the rot. However, I am not sure about this. One other question: A neighbor has an orchard of Tilton apricots about 13 years old. His trees were

full of buds, but these dried up and fell off before blossoming. What can be the cause of that?—A. N., Fresno.

Your first situation is covered by our comments in last week's editorial paragraph on "penalties of irregular moisture." The conditions which you describe are ideal for fungus growth: they did not cause the trouble, but they favored the actual cause thereof. The trouble is called "blossom rot" by Professor Smith. Your neighbor's trouble is caused by another fungus and is called "bud blight," which is favored more or less by sour-sap conditions, according to Professor Smith. Bordeaux mixture before buds swell is likely to kill all these fungi, and from that point of view is counted preventive.

For Scab and Codlin.

To the Editor: We were compelled to forego the annual lime-sulphur clean-up of our pear orchard on account of wet weather. We wish to check any possible pear scab by combining a fungicide with the arsenate of lead solution which will soon be applied for codlin moth, and several times later during the growing season. We have read of experiments some years ago of combining Bordeaux for the above purpose with the arsenical solution. Has this combination proved efficient? If so, at what strength of Bordeaux? Will the above in any way interfere with the efficiency of the arsenical solution or vice versa?—L. B. J., Elk Grove.

It is a regular and completely approved practice. Make the Bordeaux with 3 pounds of bluestone and 4 pounds of lime to 50 gallons of water, and when thoroughly mixed add 3 pounds of lead arsenate, after working it up with water in the usual way.

Ne Plus Almonds for Pollination.

To the Editor: I have just planted fifteen acres of almonds, using as varieties the Nonpareil, Texas Prolific, IXL, and Drake's. I am told by a prominent fruit man that they will not bear well without the Ne Plus. Please tell me if I have made a mistake. What should I take out to replant to Ne Plus?—F. E. F., Chico.

Certainly not. Ne Plus may be a good pollinator in some cases, for all we know about it, but Drake's and Texas are the most widely demonstrated pollinators, and therefore you do not need Ne Plus unless you wish to plant it for its own sake.

The Mixing of Sorghums.

To the Editor: Please let me know whether Egyptian corn, Dwarf Milo, or Kafr corn will mix when planted in adjoining fields.—E. W. G., Butte City.

Yes, the sorghums are greatly inclined to mix, and that is the reason why one gets so many freaky plants from common seed, which is good enough for feeding. Sorghum seed should be gathered from true plants of the type which are distant from plants of other types.

Dissolved Nitrate for Flowers.

To the Editor: What I wish to learn is the best methods of applying nitrate of soda to ornamental flowers, etc. Would it be all right to dissolve it in water and apply it in that manner in the proper season? Some say it will burn the plant.—M. S., Vacaville.

Nitrate of soda has been largely used by florists at the rate of one teaspoonful to three gallons of water. If used too often, it may kill the plants or cause overgrowth. Watch the plants: their appearance will indicate when to use the pushing fertilizer.

Garden Planning for Color Effects.

[Written for the PACIFIC RURAL PRESS
by JOHN RAWLEY.]

Mr. Clark's wail, (on page 232 of your issue of February 21) about the difficulties he finds in his way when attempting to work out an ornamental planting for succession and combination of bloom in flower borders and beds, suggests that my experiments and the resultants I have worked out in my own garden may be of interest to beginners.

These three schemes I have selected from some of my most successful effects that have survived after discarding a tremendous amount of material and many varieties. These chosen varieties are tolerant of the long wet winters, the long dry summers, a very scant amount of attention, and they need no coddling. They support themselves and withstand a moderate amount of wind.

One buys perennial plants, or sows seed and grows them for the first season in a seed bed before setting them in a permanent station. After the second year's growth the plants may be divided as they multiply very rapidly, as also do the large rooted plants such as iris, cannas and dahlias, all of which should be chosen originally from some garden where one may select colors, or they may be purchased from a reliable dealer who will give you stuff true to description and color. After one gets a stock of perennial plants, roots and bulbs, one does not need annuals, although the small edging varieties and the annual poppies, sweet peas and nasturtiums can always be used to fill vacancies left in case of oversight or accident.

These three combinations or schemes may be used in one long border succeeding each other and repeated many times, or separately, or in a bed backed up against a fence, wall or walk to give it continuity.

The different things used to cover space should be in irregular groups—not polka-dotted. The edgings must be kept as compact as possible. The third scheme calls for an edging of dwarf iris, oriental poppies and montbretias. Place the poppies near the line about 15 inches apart, and set an iris root above and below the poppy line, so as to make a diamond shaped

space enclosed by the two poppies and the iris. Dot the little montbretias over the entire strip about five inches apart. If there were more varieties to be used in this edging you can arrange it compactly on the same principal. I find the succession of periods of bloom always overlap and it is not necessary to plant two varieties for like purpose to bloom together.

Your ground must be well drained, very rich in food supply, and well soaked with water as often as it requires it. I am not bothered with dust to wash off the surface of leaves, so I never sprinkle anything. By planting very closely and using common sense in allowing for the sorts that die off after bloom and require little room, you can get enough stuff in the ground to cover or shade the surface so that you are saved the constant cultivation and weeding required by bare surfaced ground.

No. 1—SCHEME FOR BLUE AND WHITE.

1st PERIOD OF BLOOM: To cover: (that is spread out over the entire area) single pale blue hyacinths (bulbs). To edge: White Roman hyacinths (bulbs) and long stemmed blue sweet violets (perennial plants).

2nd PERIOD OF BLOOM: To cover: White narcissus poeticus (bulbs). To edge: "Royal Blue" and a shade of pale blue for-get-me-nots (perennial plants).

3rd PERIOD OF BLOOM: To cover: Tall blue German iris "Dalmatica" (perennial plants). To edge: Intermediate German iris "Innocenz" white and creamy, exquisite, (perennial plants).

4th PERIOD OF BLOOM: To cover: Blue delphiniums. To edge: White Shasta daisies (both perennial plants).

5th PERIOD OF BLOOM: To cover or group: White and violet blue gladiolus in assorted kinds. (This is very choice and much cheaper if you will let a gladiolus specialist make up an assortment of blue and white). (Bulbs).

Here should come a second crop of daisies and delphiniums if you attend to cutting all flower stalks back to the ground before seeds form. Delphiniums and hardy phlox in particular, and all perennials in general, germinate seed much better if it is sown immediately after ripening. It is best to buy a half dozen of the finest named plants you can afford, save the seed of the favorites, and grow your own delphinium plants. Phlox multiplies roots so rapidly and is so untrue in seed it is better to divide the plants.

6th PERIOD OF BLOOM: To cover: Blue Michaelmas daisies and white chrysanthemums. Buy an assortment of three shades with distinct height given, with a succession of blooming period. Get an early, medium and late assortment of white chrysanthemums (which multiply rapidly). These should last till Christmas if you will give them a muslin shelter for rains to prevent staining. A hoop covered with muslin, supported on stakes is excellent.

No. 2—SCHEME FOR CRIMSON, PINK AND PALE YELLOW.

1st PERIOD OF BLOOM: To cover: Single hyacinths, pale pink, rose and cream white (bulbs).

2nd PERIOD OF BLOOM: To cover: Assorted daffodils and jonquils

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(bulbs). These are very cheap and beautiful. To edge: Late double pink tulips (bulbs).

3rd PERIOD OF BLOOM: To cover: May tulips (very tall), crimson, pink and yellow (bulbs). To edge: Iceland poppies, white, pink and pale yellow (perennial plants).

4th PERIOD OF BLOOM: To cover: White early phlox "Miss Lingard" (perennial plants). To group in center: Tall rose and palest yellow snapdragons (perennial plants). To edge: Single Sweet Williams "Newport Pink" (perennial plants).

5th PERIOD OF BLOOM: To cover: Pink and crimson gladiolus (bulbs).

6th PERIOD OF BLOOM: To cover: Late hardy phlox, pale pink and rose color (perennial plants).

7th PERIOD OF BLOOM: To cover: Pale yellow and rose colored "Century" and "Paeonie flowered" dahlias. (Group wherever you think there will be an empty space left by bulbs when they die off after blooming. Set all bulbs in California in fall and dahlias and chrysanthemums in spring. The clumps can stand several years if you will thin them ruthlessly).

8th PERIOD OF BLOOM: To cover or group: The early "September blooming" Chrysanthemums and the common late sorts, in pink and rose shades with a bit of pale yellow.

No. 3—SCHEME FOR SCARLET AND DEEP YELLOW.

(This looks well against a very dark background.)

1st PERIOD OF BLOOM: Wallflowers, single yellow and double red (perennial plants). Commence blooming by New Year if they have enough moisture in the fall to grow on their buds.



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2nd PERIOD OF BLOOM: To cover: Spanish iris in deep yellow and lovely bronze; very cheap and choice (bulbs). To edge: Early dwarf iris, pale yellow (perennial plants). You might add to this some of the intermediate German iris with yellow blooms.

3rd PERIOD OF BLOOM: For background: Flame flower or torch lily, "Tritoma hybrida" (splendid for endurance and freshness) (perennial plants). To cover: Scarlet and yellow gladiolus (bulbs). To edge: Scarlet oriental poppies (perennial plants).

4th PERIOD OF BLOOM: To cover: Scarlet and orange cannas (perennial plants). To edge: Scarlet and orange montbretias (bulbs) very cheap and good.

5th PERIOD OF BLOOM: To group: "September blooming" and late varieties of chrysanthemums in yellow and terracotta reds.

SUGGESTIONS.

I have not ventured to specify certain named varieties in cases where there is a number of a like sort to choose from as personal taste is of such importance to everyone, but where one named sort is preeminently suited I have quoted the name which this variety is sold under.

The salmon shades of pink and rose (which should never be mixed with the purplish tinted pinks and purplish rose shades) are nevertheless lovely in combination with lavender and purple blooms arranged with white. Salmon pinks can be had in hardy phlox, gladiolus, pentstemon and snapdragons, oriental poppies and Iceland poppies. Lavender blooms can be found in tones running up to mauve and purple in violets, canterbury bells, dahlias, gladiolus, michaelmas daisies, chrysanthemums and annual asters, and are especially beautiful in iris.

To ask questions in gardening, one has to know what it is he does not know, which sounds complicated but is not to one who has gardened. I am too busy to attempt a lot of gratuitous correspondence but if my little plans given above are obscure to anyone who will ask a definite question I will be happy to give any help I can. My advice may be valuable to beginners because I started with no help but what I hunted out for myself and may be able to understand difficulties which would be incomprehensible to a professional.

The principal point is to start something. Never mind if it is not a howling success. You will never, if you live a thousand years, get a plan perfect. Always next year you will try to improve it, and unintentionally you will be improving not only your garden but your own intelligence and depth of soul, not to mention the improvement to your own property and neighborhood. Keep your color to simple combinations. A splash of rainbow—purple, crimson, yellow, green, and blue, in your garden will disgust yourself as well as your neighbors. Better make it just red and white which is charming and fresh and beautiful to the most primitive as well as the most artistic taste.

Grants Pass, Oregon.

[This will be of incalculable value and suggestiveness to California garden planters. So far as our knowledge goes this has never been worked out so effectively and systematically and with such a masterly knowledge of the material involved and their relation to growing conditions on this coast.—EDITOR.]

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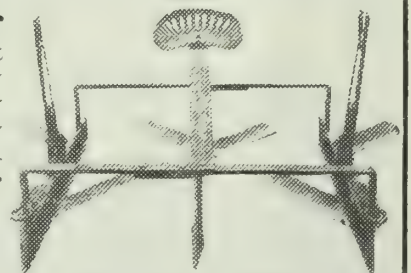
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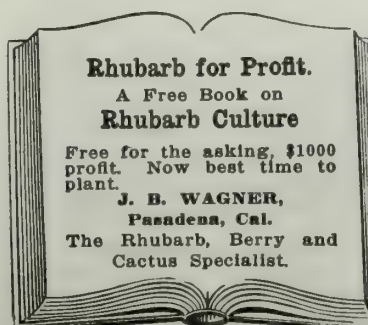
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Flap-Budding the Olive.

Charles A. Wetmore, the veteran vinticulturist, who was a moving force in starting Californians along the line of progress which was discerned by him about 1875, is now a resident of Marysville and is ministering to the strong local interest in the olive in the Feather River district. From his writing in the Appeal, which is designed chiefly to awaken the interest of high schools in horticulture, are taken these paragraphs:

"Late in the spring, when advancing warmth has set the sap to moving freely, observe any growing olive tree of the kind you desire to propagate. Notice the parts of limbs with vigorous growth and clean bark free from little lateral twigs. Where a leaf adheres to such limbs, or where one has been and fallen off, there is a small eye, often like the eye on a smooth potato. On a stick a foot long you may find half a dozen or more good eyes, each one of which will serve for budding. So it does not require a large number of cuttings to provide material for the orchard.

"The dormant buds or eyes are lifted from the wood together with a small piece of the bark about one-third or half an inch square. On the properly selected limbs of the Mission or other olive trees, make three cuts with a knife so as to include a space a little longer than the piece of bark to be inserted. Two parallel cuts are in line with the limb; one is across the top. Lifting the flap of bark thus made carefully with dull side of a blade, the cambium layer of the wood will be exposed. Slip in the

piece of bark from the cutting and press it close with the flap made on the limb. Tie the flap firmly to cover the whole piece inserted. I used raffia for ligatures, but strips of cloth or soft twine will do. At the end of one week cut the ligatures and suffer the flap to curl up and dry. If the insertion has united to the wood, it will remain green and fresh-looking about the dormant eye. If this freshness continues after exposure, the bud has taken.

"Then cut with a knife or saw into the limb above the bud to induce the sap to force the growth. If any one fails, the limb need not be injured, but may be budded in another place. The following winter, cut off the limb above the bud if it has sprouted well, and, as sufficient new wood is made, the old branches of the tree may be cut away."

OVER-OPTIMISTIC CROP REPORTS INJURIOUS.

To the Editor: Some time ago I was speaking to you in regard to the wrong done and loss to the fruit-growers of this State by the promotion organizations, and others, who send out reports of the enormous crops we are going to have, long before we can tell anything about it.

Even the apricot orchards which were irrigated and did not suffer from drought the past two seasons, and bloomed and set an abundant crop, now have only one-tenth the crop that was set. In some cases there will still be a fair crop, but in many where trees suffered from drought there can-

not be a good crop; but just how small the crop will be, cannot be told as yet. We have not had any killing frosts, but there is a long time yet that we are liable to have them—

more than a month to the date of the frost which did the greatest harm last year.

Prunes bloomed very heavily, but the dry hot weather we have had during

"'pon my soul; not a sound. If I didn't see the hay fall, I wouldn't believe that Johnston Mower was running."



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the whole blooming season makes it problematical what the safely-set crop will be.

I think there ought to be some way of giving safe and true crop reports to the public, of just what conditions are, regarding the prospective crops.

Even under the present system of government crop reports, one could not form any reliable opinion of the true condition of crops, in California at least.

Taking the present condition of unreliable government reports and those of the "booster" organizations and the "buying interests" altogether, the fruit-grower in particular, and California's welfare in general, get a hard and unfair deal.

F. C. WILLSON.

Sunnyvale.

[In the talk referred to, the point was made that inflated crop reports cause the growers to think the price will fall, and they grab at a chance to contract the crops at lower figures than they ought.—EDITOR.]

IRRIGATING ACROSS NEIGHBOR'S PROPERTY.

To the Editor: I wish to ask a question regarding the rights of a person to run a ditch across another's property for the purpose of irrigation. To make it plainer, I append a rough sketch showing what I wish to know. I own a pumping plant and can sell water provided I can get it across the intervening property. Can the owner of this intervening property stop me from running the ditch if I pay him a reasonable price for the privilege, and what would be a reasonable price for this privilege?—C. L. K., Mountain View.

ANSWER BY A. E. CHANDLER, OF SYMMES, MEANS & CHANDLER.

By statute adopted in 1913, anyone distributing water to land not owned by himself must be considered a public utility and subject to regulation by the California Railroad Commission. Being in public service, the owner of such a system would have the right to condemn a right-of-way. No one can fortell what the cost of the right-of-way would be, as it would have to be fixed by a jury. It would undoubtedly, however, be in excess of the ordinary acreage price of the land.

The only way to avoid being a public utility in such a case would be to sell an interest in the pumping system to those whose lands are to be irrigated. Under such conditions the system would no longer be considered in public service, and it would therefore not have the right of condemnation. It would have to pay whatever the owner of the land desired for the right-of-way.

A. E. CHANDLER.

Berkeley.

DO YOUR OWN DYNAMITING.

To the Editor: I planned to have some blasting done on the ranch, and the expert to whom I submitted the proposition, because of the hazardous nature of the work, demands \$10 per day. Now the "Accident Board" steps in and says if I have that work done I must pay them \$2.50 per day because of the hazardous risk. Thus making me pay twice for one risk.—C. R. W., Hanford.

[You are surely paying "twice" before the "accident board steps in." Handling 25% or 40% dynamite is less dangerous than driving good horses. You can scarcely make it explode without a cap or a hammer. If you must

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DOUBLING OF TUSCANS.

To the Editor: In going over my peach orchard I notice my Tuscans are fully half double peaches, some three and a few four are grown together. The frost killed all last year, and this is the first time I have had a chance to see peaches of any kind on

my trees. I also have Phillips, Lovells, and Muirs, but the latter are all right. Is it natural for the Tuscans to do this, or is there anything I can do another year to avoid it. I pruned rather close this year, so have no peaches to thin out. Will leaving enough on next year so I could pull off all the double ones and still have a crop left be the best procedure?—G. H. W., Arboga.

[Yes. We know of no way to change the setting habits of the tree, and you are obliged to thin off all doubles, unless you wish to take time to split the groups or to thin the blossoms—both of which are impracticable from a commercial point of view, though possible to an amateur.—EDITOR.]

WHO CAN HELP THIS KALMIA?

To the Editor: Can you tell me what is the trouble with my Kalmia latifolia? It has been planted about fifteen months and blossomed well last spring. But in late summer it became bare and scorched-looking with few leaves. It has not improved this winter, though treated the same as the rhododendrons, which look splendid.—Mrs. G. L., Redwood City.

[We can only guess at it, because we have not tried to grow the plant. Our guess would be that it suffered from drouth last summer and must make another good leaf growth before behaving normally. Who can give a better answer?—EDITOR.]

Peach Pruning in the San Joaquin.

Methods of handling the peach tree from planting to bearing, as practiced in the large peach districts of the upper San Joaquin valley, are outlined by Charles F. Collins, horticultural commissioner of Tulare, as follows:

THE COMMON VASE FORM.—The

method of pruning considered best suited to conditions in this State, and almost universally adopted here, is known as the vase form. There are various ways of securing and maintaining this form. The most popular method is as follows: At planting remove all laterals and cut the tree back to a height of about 18 inches. The following winter three or four of the strongest and best placed branches are selected to form the head of the tree. All laterals are removed from these and they are cut back to a length of about 18 inches. All other growth is removed from the tree.

The second winter, leave two strong laterals on each of the main branches left the previous year, and cut these back to about 2 feet in length, removing all large laterals on these as well as on the other parts of the tree. It is better at this pruning to leave some of the smaller growth to protect the tree from sunburn and induce greater leaf action. At the third pruning, leave two of the strongest laterals properly distributed on each of the branches left from previous year's growth. Shorten these to about 2 feet. Remove all the larger laterals from the tree, but leave most of the small laterals, especially those that hang down from the main branches, as these will bear a few peaches.

Future pruning will consist mainly in renewing and regulating the amount of bearing wood and preserving the form already established. The tree should be kept well balanced, and the center not too open, as the fruit will naturally pull the branches outward, and if the center of the tree is too much exposed, sunburn, borers, and a rapidly decaying tree will be the result. Trees making a feeble growth must be cut back more severely than vigorous ones. The general rule is to cut back from one-half to two-thirds of the season's growth. As the tree comes into full bearing, the growth of new wood diminishes and the number of fruit buds increase, necessitating more severe pruning.

TRAINING TO CONTINUOUS LEADERS

Another method of vase form, known locally as the Sims method, has been practiced for many years by William Sims, of Farmersville, and is now practiced by the California Fruit Canners' Association in its large orchard near there, by Hunt Bros. in their orchards near Exeter, and by many individual growers in that vicinity. By this method the trees are cut back to 18 inches at planting, and at the first winter's pruning four or five of the most upright-growing branches are left to form the head. These are cut to a uniform height and as great a length as the season's growth will allow. On a vigorous tree this will be about 6 feet. All laterals are removed from these.

The second winter retain one strong upright branch emerging from near the end of each branch of previous season's growth, and remove all laterals from the tree larger than a lead pencil. Top these main branches at a uniform height of 10 or 12 feet from the ground according to the growth made. Sometimes a lateral is allowed to grow from one of these main limbs to fill in an open space in the outline of the tree. At the end of the second winter's pruning, we have a low-headed tree with four or five main branches 10 or 12 feet long, and so upright that the tree is only 6 or 7 feet across the

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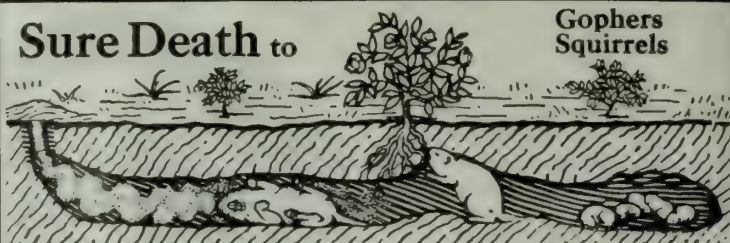
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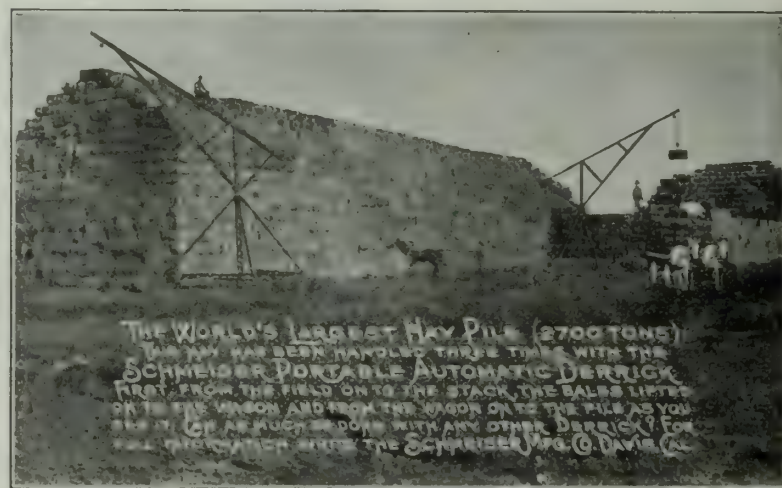
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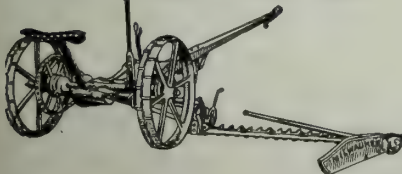
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top. Enough small laterals are left for abundant shade. After this each season remove all large laterals, leaving only the small fruiting wood, and cut this back to the required amount.

Some of the claims made for this system are that no propping is required to support the limbs, and as these are so nearly perpendicular in growth the orchard is more easily worked close to the trees and the trees are more easily kept down to a proper height than when pruned by the ordinary method. This system certainly works admirably in the sections where it is used, and in my opinion, on true peach soil, where the trees are vigorous and grow large, strong limbs, it is far superior to the old vase form, but it is a question if it would prove as satisfactory in many of our orchards where the trees make a more feeble growth, and especially with a tree of as slender growth as the Muir. Of course, with a less vigorous tree it would require three or even four years to get the tree to a proper height by this method.

[It should be noted that this training to continuous leaders and causing fruit to appear on short laterals close to these leaders, is not original in California. It is an old European method which is receiving important local modifications, just as the common vase form is a modified European method.—EDITOR.]

WHEN FIR IS PINE.

To the Editor: Will you be kind enough to inform me in regard to Douglas fir, Oregon fir, Washington fir, and Oregon pine, as follows: Do the above names designate the same kind of tree or lumber? If not, how may they be distinguished one from the others?—D. B. So. San Francisco.

ANSWER BY DR. JEPSON.

To the Editor: The tree in question is *Pseudotsuga taxifolia* of botanists. Its official name is Douglas fir. When a log of Douglas fir is manufactured into lumber it is marketed under the trade name of Oregon pine. Oregon pine is therefore the name for a manufactured product and not for a tree in the forest. In the forest the tree is best known to woodsmen as "red fir" or "white fir." It is also called Oregon fir and Washington fir, the two States where the tree is most abundant and reaches a high development.

For the sake of accuracy it is well to remember that a Douglas fir is not a true fir. True firs are of the genus *Abies*. Douglas fir has pendulous cones borne all over the tree; in *Abies* the cones stand erect on the horizontal branches in the very top of the tree. And there are other differences. Now the names "red fir" and "white fir" are also applied to the species *Abies magnifica* and *Abies concolor*, respectively. Indeed, those names are the correct common names for the species just referred to.

And since we have touched on accuracy, there is one further point to be borne in mind. Lumber products are often sold under other names than those which indicate their correct designation. And it is undoubtedly the case that conifers in Washington and Oregon, which are not Douglas fir trees, are manufactured into lumber and occasionally, or locally at least, sold under the name of Oregon pine.

W. L. JEPSON.

University of California.

SURFACE IRRIGATION PIPE

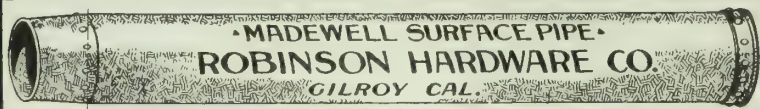
When land and water were cheap, ditch irrigation was good enough. But now this wasteful method is being rapidly abandoned. Instead, irrigators are using

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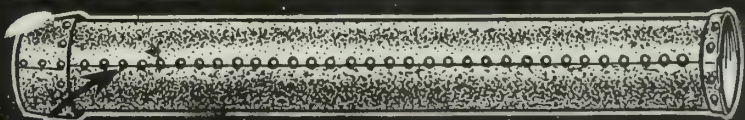
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See Those Rivets
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Farmer?

AGRICULTURAL REVIEW.

Markets and Transportation.

Steamship lines are making active preparations to handle fruit to the Eastern seaboard and Europe as well as South America. To New York will be a maximum of 15 days, as compared with 10 days by rail. Refrigeration, however, will be much simplified by having the refrigeration plant on board.

The advance of 16% in express car-load rates on fruit to the East has been held up until July 24 by the Interstate Commerce Commission.

American cotton exports for February increased \$13,000,000 over February 1913.

Santa Rosa won her fight to become a terminal point, and the other 187 California points will continue to enjoy terminal rates by order of the Interstate Commerce Commission.

Eastern fruit auction markets in the great cities are the determining factors in the price of California fresh fruits. It is asserted that the di Giorgio interests have control of most of these and of the Earl Fruit Co. of

California and of the Pioneer also. They seem to have made no effort to widen the field of distribution to reach interior towns directly as the future welfare of our fruit-growers demands. The California Fruit Exchange, composed of local associations of deciduous growers, has heretofore directed its attention to these neglected points, and last week the Powers Fruit Co. of Fresno was incorporated, with \$100,000 capital for a similar purpose.

Trading in cotton futures is to be reduced to a spot trade basis instead of the arbitrary system now used, if a bill recently passed by the United States Senate becomes law and works as its authors hope.

Los Angeles county leads the 2950 counties of the United States in the value of crops, according to final figures of the 1910 census, which gives her crop value at the farm as \$14,720,900.

California apple shippers have come to an agreement with those of the Northwest as to the provisions of the Raker bill standardizing apple packs for the United States. Foreign shipments will be allowed to comply with laws of the importing countries.

Irrigation.

Governors of arid and semi-arid States have been asked by Secretary of the Interior Lane to send representatives to an Irrigation Conference to be held in Denver next week. It is hoped to devise plans for federal and state co-operation in putting irrigation projects on such a business basis that private capital will be attracted. Thirty-four delegates from California have been appointed by Governor Johnson.

Thousands of acres along Date creek in Arizona are to be irrigated from a reservoir to be started this summer in Tres Alamos canyon by a company recently incorporated at Prescott.

Railway valley, in Nevada, gets artesian gushers at 450 feet. Many wells are to be sunk this summer.

Incomes derived from irrigation district bonds are not taxable, according to a recent decision of the Department of Justice overruling one of the Treas-

Select New Crop

MELON SEED

Black Seeded Chillian.....\$1.00 per lb.
Angeleno—very early..... 1.10 per lb.
Tip Top Muskmelon (very fine)..... 1.00 per lb.
Rocky Ford (select)..... .90 per lb.

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Other High-grade Seed at "Low Price and No Price Can Buy Better."

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KILMOL

SQUIRLOPHONE

KILLS 'EM ALL

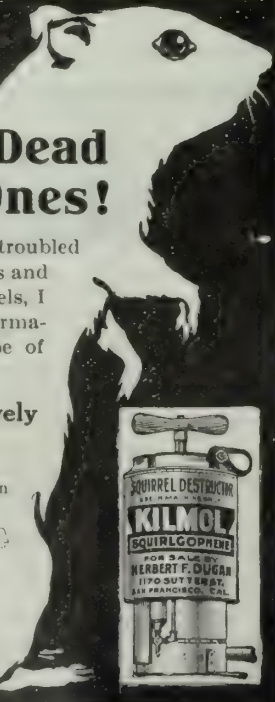
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If you are troubled with Gophers and Ground Squirrels, I have some information that will be of value to you.

Approved and Used Extensively by the Government 100% Efficient

A Postal Will Bring You This Information. Write now right now! Don't delay!

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POMELO

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Also considerable surplus in Figs, Peaches, Plums, Prunes, etc., etc.

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12 to 30 Inch Florida Sour Seedlings

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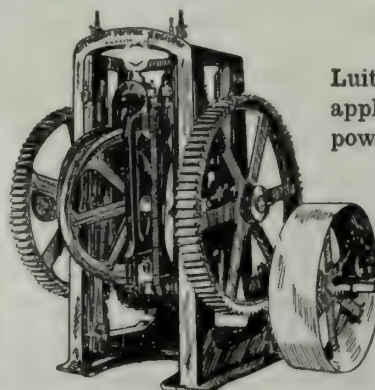
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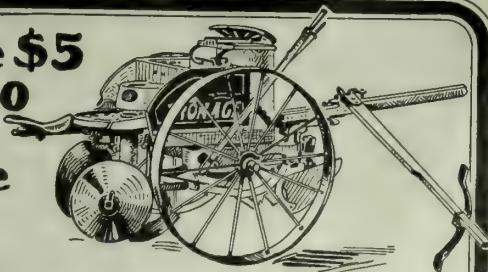
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Iron Age Potato Planters

AT LEAST 10% of the value of your crop is the cost of not being sure. A 10% crop loss can be absolutely prevented by one man's labor—in connection with the IRON AGE POTATO PLANTER. A rear seat is provided for a man or boy to prevent misses or doubles—so that you get one seed piece in each space, exactly where you want it—right depth and right distance apart. The extra labor costs only 10c per acre, and will mean from \$5 to \$50 per acre extra profit to you.

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FLORIDA SOUR ORANGE

SEED-BED STOCK

grown without shade, as are ours this season, are vastly superior to those grown under shade.

They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencias, Lemons and M. S. Grapefruit. Order now.

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We also make a full line of Gates and Valves for cement pipe irrigation.

ury Department. This will facilitate the sale of such bonds.

The State department is planting willows for protection of Sacramento river levees. Half of the cost will be borne by the State, the other half by property owners benefited.

Meetings and Festivals.

Tractor demonstrations at West Sacramento are to occupy May 7, 8, and 9. California companies will there meet British competitors on the 600-acre field to be used.

A rice carnival is to be held in the fall at Gridley. Winters has an apricot festival, May 21, 22, and 23. Santa

Clara is to have a cherry carnival on June 6 and 7. Sacramento has been having a poppy campaign in which the Governor picked blossoms with school-children and decorated the city plaza. A parcel post package of poppies and poppy seed was sent to President Wilson with telegraphic request that he plant the seed beside the White House. Fresno papers are well loaded with Raisin Day plans. Santa Rosa hopes to run a special car to the State Fruit Growers' convention to be held at Davis, June 1 to 6. Princeton is to have a rose carnival April 25.

Organizations and Exhibitions.

Counties on the west side of the Sacramento river recently organized with expressions of co-operative sentiment with the Sacramento Valley Development Association.

The North of Bay Counties Association recently reported at its meeting in San Francisco that the advertising train operated through the East last year had been written up by 561 newspapers, while advertisements were run in more than 12,000 papers.

Main buildings for the San Diego Exposition are already practically complete.

Several of the biggest prizes at the Dallas, Texas, Land Show were taken by the California University Farm exhibit.

The California Green Fruit Association was recently organized in Fresno county with \$25,000 capital subscribed by growers. Its purpose is to regulate distribution of fresh table grapes and tree fruits on Eastern markets.

Oregon loganberry growers have formed a state association to standardize fruit packs and keep them up to standard.

TREES

**Now Is the Time
to Plant Evergreen
Trees, Shrubs
and Palms**

We have a magnificent stock of all the leading varieties. If you want to plant just a few of these fine trees to ornament your home grounds, or whether you purpose planting on a large scale, it will be to your advantage to get our quotations before placing your order.

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We have just issued a special Bulletin on the olive, giving valuable information on planting, pruning, cultivating, harvesting and packing. It will be mailed free on application. We have a fine stock of MISSION and MANZANILLOS in surplus and will name you attractive prices. Let us figure on your orders.

Citrus Trees

If you have not already arranged to plant citrus trees this season and are in a position to do so, we can offer you the finest stock grown on the Pacific Coast. We have a complete assortment of all the leading varieties of oranges, lemons and pomelos and will be glad to have the opportunity of figuring with you. Write us today.

We call your special attention to our large and magnificent stock of



Some people are under the impression that it is too late to plant deciduous trees, shrubs, and vines. This is a mistake and we can still furnish a fine assortment of fruit and ornamental, Deciduous Trees, Grape Vines, Roses, etc., in good condition.

**CEDARS
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In Evergreen Shrubs we suggest Box-wood, Christmas Berry, Euonymus, Laurels, Ligustrums, Oleanders, and Pittosporums.

In Palms we have all the leading varieties such as Chamaerops, Cocos, Erytheas, Phoenix and Washingtonias.

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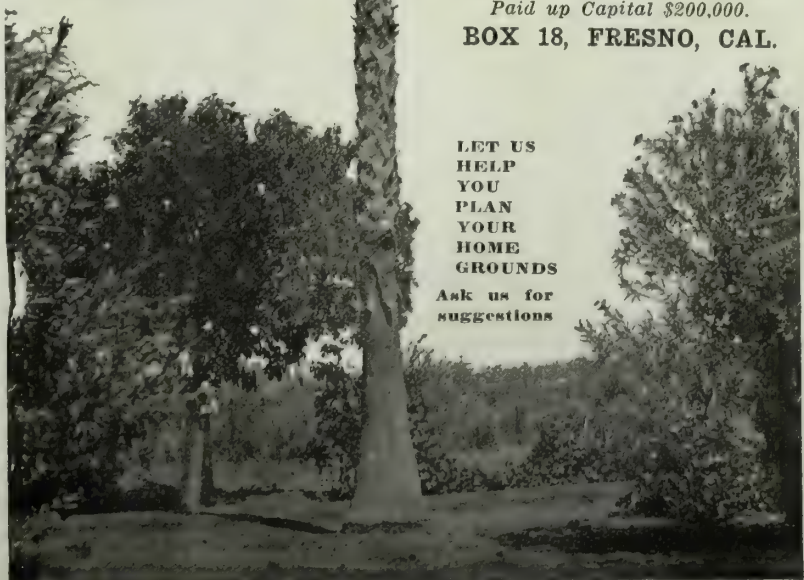
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GROUNDS

Ask us for suggestions



Constructive Agriculture—No. 13.

The Limitations of Co-operation.

[Written for the PACIFIC RURAL PRESS by L. W. PARSONS.]

[The enclosed article is the result of much thinking, observation, and conversation with business men both in the East and in California, and Mr. Parsons believes is a view of the question of co-operation that is true and needs to be kept in mind by all concerned. Mr. Parsons has been a member of the Santa Clara County Dried Fruit Exchange from its inception; also a contributor to the California Farmers' Union, and he was also a member of the late lamented California Cured Fruit Association that collapsed so ingloriously. Taking it altogether, he believes he has done as well as his neighbors have who thought they were too smart to join such things. Mr. Parsons' convictions are that the proverbially independent farmer must outgrow the influences of his old isolation and recognize the solidarity of society and conform his methods to the laws of life. His independence carried to extremes has kept him on the verge of savagery or anarchy, and so the victim of modern organized activities in the business world. He writes this article in the hope that it will be helpful to a better understanding of the conditions of successful co-operation.—EDITOR.]

Promoters of co-operation among farmers would do well to face the facts squarely and admit that there are limitations to such movements, and so avoid the disappointments that have resulted in disgust and desertion by the members of such organizations.

People have been led to expect that the profits of the middlemen would be saved to the producer. This is practicable to only a limited extent, for there is a legitimate place and function for the middlemen that call for a certain amount of effort and expense that cannot be avoided, and necessarily must conform to the usages of trade.

How PRUNES ARE SOLD.—To be more explicit, there is a wide difference between the price the prune-grower gets for his fruit and the price the consumer pays for it in an Eastern retail store. If this difference were the profit of one or two middlemen, it would seem to be unreasonable, and ought to be cut down by some reform movement.

There are three legitimate steps in the progress of the prunes from the farmer to the consumer:

First, the packer gathers up the fruit from the many different small producers and prepares it for the trade, grading and packing it in a suitable manner.

Next comes the broker who specializes in certain lines of goods. He keeps in touch with the sources of supply for his special trade and drums up his lines of customers among the jobbers or wholesale grocers. The packer is not in a position to reach these jobbers, or if some of them attempt to do so, it costs them that much more to employ drummers to circulate among the jobbers and perhaps maintain warehouses in the East convenient to the local markets there. If the packer does this, he is doing the work of the broker and it costs him what it would cost the broker

to do the same work. He may make enough to pay him for the trouble and extra expense, but even then he is at a disadvantage because the broker when he approaches the wholesale grocer has his special lines with which to interest the dealer. It is his business to keep an assortment available on short notice, and in lots to suit, of several kinds of goods. For instance, he may have an assortment of all kinds of dried fruits, nuts, raisins, figs, olive oil, honey, and perhaps canned goods and so forth. This is out of the scope of the local packer in California.

Next comes the wholesale dealer or jobber. He must keep on hand a great variety of goods such as the retail grocer wants for his trade. Anyone who looks over the stock of a good-sized city store will soon realize the amount of work necessary to gather such a multiplicity of goods from all parts of the world. It is not practicable for the wholesale dealer to send his men all over the country buying up odd lots of miscellaneous goods from the producer or manufacturer; rice from one section, sugar from another, beans here, and ham a thousand miles away; olives in another State, and dried fruits from 3,000 miles away. This is a business by itself, and most jobbers are not in a position to do that kind of work and could not do it as cheaply as the broker who specializes in these different kinds of merchandise. For it is cheaper for one broker to buy 100 carloads of a certain line of produce than for 100 jobbers to send their agents to buy 100 separate cars of the same goods with the many extra expenses involved in doing business in a small way.

As to the retail merchant, it need hardly be said it would cost him a good deal more to send his men all over the country to gather up what he wants for his customers than to buy it of the jobber. On the other hand, it would cost much more for a thousand producers to send their agents to call on the retail dealer and take his orders. Then, of course, there are a few retailers who buy in large enough quantities to get the best freight rates.

Up to this point, the profits are very small and pay only because of the large quantities involved. A carload of prunes may change hands at a profit of only a quarter of a cent or so per pound above the cost of handling.

THE RETAILER'S PROFITS.—The risks of business arising from the fluctuations of the market make it necessary to charge a large enough profit to cover losses and in addition many incidental charges and expenses including freight, cartage, office salaries, shrinkage in weight, waste, and leakages, that must be met by the one who does the business, whether it is the middleman or some one employed by the farmer. The retail grocer gets the largest percentage of any of the so-called middlemen, and gets his full share of abuse, but he is beyond the reach of the producer. He is restrained, however, by competition from making an unreasonable profit. It is claimed by well informed men that it is necessary for the grocer to charge at least 10 per cent profit on

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The Layne & Bowler pump absolutely will not choke, clog or stop up. The Layne patented screen not only eliminates all sand troubles but permits a much larger water capacity than other screens. Wherever this System is installed, trouble ceases. There is hardly anything to get out of order because of the extreme simplicity of the System.

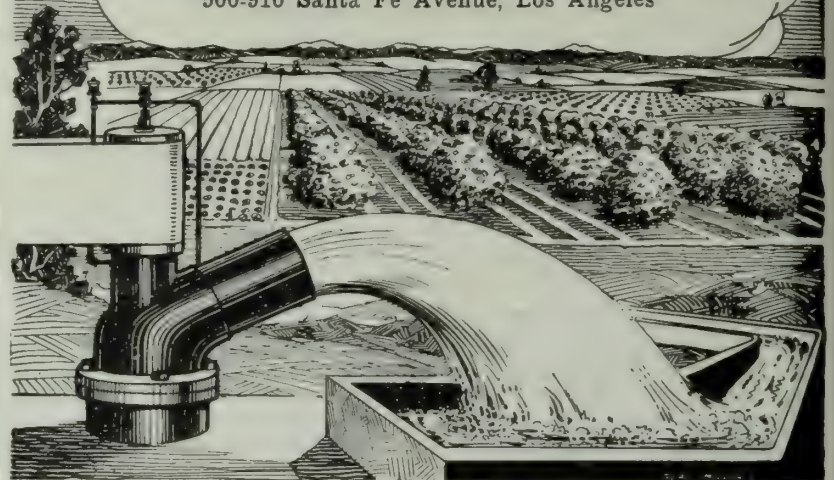
THE MOST EFFICIENT WATER SYSTEM IN OPERATION

The leading water and irrigating engineers highly recommend the Layne & Bowler System because it has proven its superiority time and time again under the most severe tests. Be protected against an insufficient water supply by installing this System—the System that has given perfect satisfaction to hundreds of users all over the country. Let our water experts solve your water problems.

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The KROGH Vertical Pumps



New Type Vertical

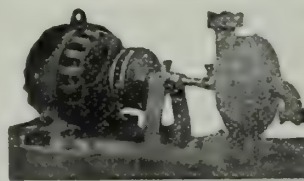
Are automatically water balanced and require no adjustment of any kind. All weights of shafting and rotating parts are carried on the water film; absolutely without the use of thrust bearings or adjustment of any kind.

No BALANCE RINGS or PLATES in KROGH PUMPS. They are unnecessary, and mean only continual trouble.

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PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

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Mention Rural Press

the cost of his merchandise to pay his running expenses such as rent, clerk and office salaries, care of delivery teams, taxes, insurance, advertising, and other incidental expenses too numerous to mention here. Something must also be allowed for bad debts which are unavoidable. He also loses from leakage and deterioration of goods. It requires a good-sized business and careful management to make

a success in this line, and, take it altogether, the retail grocer is not getting any more than he is entitled to for the use of his capital and his own time, to say nothing of what business skill and talent he may possess.

Here and there may be found abuses and bad methods and dishonesty that ought to be reformed; but for the most part they do not come within the scope of a farmer's co-oper-

ative organization.

DIFFICULTIES OF DIRECT TRADE.—If a body of farmers undertake to do a packing business and market their own produce, they may expect to get the profits that the commercial packer gets, but they must incur the same expenses that the packer does; they must borrow money from a bank for a working capital, supply themselves with a packing-house, and employ the same force of office help and workmen as any other concern would do.

A board of directors is usually elected to conduct the business. Perhaps the best that can be said of them is that they are sincerely endeavoring to work in the interests of their organization, and mean well. Some of them may be good business men, but most of them are farmers without much practical knowledge of business. If they were possessed of real business talent, they would presumably be in business for themselves. So the presumption is that they are better farmers than business men. Probably the most conspicuous ones are those who are gifted as talkers and are more theoretical than practical. When such a management comes into competition with keen, shrewd, experienced business men who are in the business for all they can make out of it by any legitimate means, and sometimes by illegitimate means, what can be expected? The only way to meet such a situation is for the directors to employ a man for a superintendent or manager who will be equal to the difficulties and responsibilities of such a place. This is the critical point of the whole movement. Such a man with the requisite ability and character is usually in business for himself. If free to engage in such a proposition, he can command a high salary which few if any boards of directors would feel at liberty to pay. Such a man would be worth from \$2000 to \$5000 a year perhaps, to himself or to anyone who should employ him. But such a salary would probably eat

up all the profits of the organization and would be the cause of no end of bickerings among the members, who would accuse the directors of favoritism if nothing worse.

WHAT CAN CO-OPERATION DO?—If all this be true, it may be asked, What good can be gained by co-operation? The greatest good will come from consolidating the products of the hundreds or thousands of growers into the hands of a few men who will work for the interests of the producers. These men can get reliable information as to the conditions of the markets of the world, and learn the conditions governing the supply and demand, and so learn the real value of the goods they have to sell, and then hold them for such a fair price as the conditions will warrant, and that will be just to all. In this way, competition would be reduced to a minimum and the market price would be steadied so that buyers would not always be in fear that the goods they bought would depreciate in price on their hands.

Such a state of affairs would check speculation and perhaps eliminate the gambling methods now so often employed to the destruction of legitimate values.

If each 5,000 farmers goes to each of 25 buyers and offers him prunes, there would be 125,000 arguments over the price. Of course, this could have only one result: the sellers would get scared and let their prunes go for what the buyers were willing to pay. But if the buyer had only 10 men to deal with, the sellers would have just as good a chance to agree among themselves as to prices, as the buyers now have.

It seems as though anyone could see the force of such an argument, no matter how dull of comprehension; but many will say, "It can't be did."

INSTITUTION BUILDING.—We ought not to expect immediate success in co-operative movements. The disappointments of the past have been the principal obstacles to success. Every advance made in the direction of co-operation strengthens the position of the producer. Every advance made in the direction of co-operation adds strength and value to the market. If 100 farmers get together to sell as one man, that cuts out 99 sellers, and reduces competition that much. And if another lot of farmers do the same, the situation will be still further improved. As the movement goes on, the selling pressure becomes smaller, and although all do not combine, still all will be benefited by the improved conditions.

Do not be disappointed if you do not get high prices at first, for it takes time to build up a large business of any kind, and such a movement requires time to develop a large organization and to establish confidence in its stability.

When the buyers are convinced that the producers are able to hold their goods for a fair price that is justified by the laws of supply and demand, then that price will be paid.

of coal oil till it boils, he adds a bar of rosin soap and stirs till the oil and soap and water are well mixed or emulsified. When the emulsion is cool he dips the cabbage tops thoroughly, holding them by the roots which should not be dipped. The lice under or between the folded leaves cannot stand the bath. Too much coal-oil would hurt the plants.

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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WANTED—Manager for demonstration plant for Spineless Cactus in every town in California and Arizona. Big commissions made. Write **SPINELESS CACTUS PLANTATION CO.**, 315 South Hill St., Los Angeles, Cal.

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VICTORIA, AUSTRALIA, WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California; no extreme heat or cold. Small deposit and 3 1/2 years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairying, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from **F. T. A. Fricke**, Box W, 687 Market St., San Francisco.

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COLLIE DOGS of choicest breeding. Ideal for show bench or farm. Fine companions. Puppies 3 and 7 months old. Also grown stock. Prices reasonable.

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BRAE BROOK COLLIE KENNELS, Route 3, Box 69, Santa Rosa, Cal.—Puppies for sale by Lord Ormonde ex Brae Brook Babbie (Tri-colors), \$15 to \$25.

RUSSIAN WOLF-HOUNDS—Puppies and mature dogs of both sexes; special prices. **GEO. A. SMITH, Jr.**, Corcoran, Cal.

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HOW TO MAKE egg cartons and parcel post boxes for various purposes from material which is free in every town; boys and girls can make them; instructions by mail \$1. Mount Whitney Homestead, Lone Pine, Cal.

"WE PAY THE FREIGHT"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. The Direct Supply Co. has combined with us. **SMITH'S CASH STORE**, 106 Clay St., San Francisco.

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FOR SALE—Peach, apricot, plum, prune, fig, apple, pear and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants; elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. **FRINK & KOHMAN**, Nurserymen, Box 1212, Fresno, Cal.

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Armstrong Engines are guaranteed for FIVE YEARS, are equipped with Magneto and patent roller valve gear. 1 1/2, 2, 4, 6, 8, 10, 15, 20-h. p. sizes. Just the Engine for pumps, saws, sprayers, grinders and other power purposes.

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R. F. WILSON, Stockton, California.

WOOL OR MUTTON SHEEP—WHICH?

(Continued From Page 417.)

the small Spanish Merino type, shear a better grade of wool, and an average of 16 cents is obtained for the spring clip of 5 pounds, and 9 cents for the fall clips of 4 pounds. This makes a total of \$1.26 per sheep, which minus the shearing charges leaves a net of 94 cents. There is one band of 12,000 sheep in Placer county which will make much more than this per head, as they are all of the strictly French Merino breed. The grade of wool from this bunch is always the finest and every fleece is alike.

The Mendocino and Humboldt county wools are in a class by themselves.

Both Separator and Engine Combined At One Low Price

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12 head Jacks from 2 to 6 years old all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

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BLACK LEG VACCINE FOR THOROUGHBREDS, should be, for greater safety and protection, the "double" form. No. 1 dose, slightly weaker than regular vaccine, is safe to use on thoroughbreds, and prepares them for No. 2 dose, which gives full protection. Cutter's Blackleg Pills, Double, \$1.50 per pkg., 10 double doses, are given exclusive preference by California breeders of thoroughbreds. Insist on Cutter's. If unobtainable, order direct. Send for booklet. **The Cutter Laboratory, Berkeley, Cal., or Chicago, Ill.**

But while they produce the best wool in the State, not over 10% of their lambs are sold as meat. From certain sections of Humboldt county, a wool is produced which classes with the best raised in the United States—that from Ohio. The sheep are high-grade Spanish Merinos and are sheared but once a year. They produce about 10 pounds of staple that brings about 19 cents. It costs a little more to shear sheep in these counties on account of the greasy, heavy condition of the wool—about 15 cents per animal. This leave a net of \$1.75 per animal. In the Cloverdale and Ukiah sections, about 50% of the growers for the last three years have been shearing twice a year. The spring clip is about 5 pounds at 16 cents, and the fall about 4 pounds at 12 cents, which minus the 22 cents shearing charges leaves a net of \$1.16 per animal.

In Yolo, Solano, Contra Costa, Napa, and Sonoma counties the sheep are raised for lambs instead of wool. The "black face" or Shropshire is the popular sheep. The average spring clip is 3½ pounds, at 16 cents a pound, and the fall clip is about 3 pounds at 12½ cents. This makes a total of 93½ cents, minus the shearing charges leaves 71½ cents profit.

MUTTON PAYS BETTER EXCEPT IN NORTH.—From these figures it can readily be seen why sheepmen in every county, excepting Mendocino and Humboldt, are changing from wool to mutton sheep. At \$1.16 per animal around Cloverdale and Ukiah, and \$1.75 in Humboldt county, makes the wool sheep profitable in those counties, but 56 cents as received in the southern counties, 77 cents in middle counties, and 94 cents in northern counties makes the sheepmen switch from wool to mutton. Especially, since the wool on the mutton sheep brings 71½ cents, and coupled to this is the fact that the mutton lamb can be sold at three months while a wool lamb takes four or five months. The wool lamb will average 28 pounds and the mutton lamb 32. As the mutton lamb has the better quality of meat, it brings higher price. A dollar difference in price can safely be figured between the wool and mutton sheep. But besides maturing earlier, and better prices, the mutton sheep is a better rustler and will do much better than a wool sheep under adverse conditions.

At the present time there is a scarcity of lamb and mutton in California. The alarmists a year or so back said that the importation of Australian and New Zealand mutton would kill the sheep business on the Pacific Coast. If such is the case, California ought to be swamped with foreign mutton at the present time, for this is the season when the sheepmen in the Antipodes are marketing their flocks. But in reality what do we find? The California butchers clamoring for lamb and mutton. Some are sending their buyers to Nevada, Oregon, Idaho, and even Nebraska for winter lambs and sheep. Why does not the New Zealand lamb and mutton come over here in large enough quantities to supply this demand? Because they can get a better price for their frozen meats than we are offering for it. Here in San Francisco frozen meat sells from 1 to 2 cents less than the fresh article, so until prices rise we will eat very little New Zealand meat. And even should we offer a higher price for their mutton, it would not hurt the local sheepmen to any great ex-

tent, because their selling season is just the opposite of ours, so that the

California sheepmen have no competitors in their flush season.

Save Your Alfalfa Crop

Buy an Ideal Green Feed Silo now and fill it with your first cutting of alfalfa, which insures you against losses from wet weather in attempting to save it for hay.

This first cutting alone will pay for an Ideal Green Feed Silo the first year, as it is almost worthless for hay even if you should be successful in getting it properly cured, on account of it being full of weeds.

By siloing this crop, you clear that portion of your ranch of weeds as there is no chance for these weeds to reseed again and, at the same time, your ensilage is available just at the time your pastures are burnt-out and feed is most expensive.

Weather conditions, drought, burnt-out pastures and high prices of mill feed will not worry you if you have a silo.

Write for Catalog B for full information.

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are best fitted for conditions in California, Arizona and Nevada, because they were designed to fit these very conditions. The fact that over 75% of the water well drilling rigs now in use are of our design and manufacture proves their high efficiency. Don't purchase without investigating our rigs. Write for Bulletin No. 19-R.

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ENGINES are the most successful, economical and durable distillate burning engines on the market. 9 to 150 horsepower. Write for Catalog 18-R.

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Take Huntington Park yellow car at Seventh and Spring, and get off at Ninth and Santa Fe Sts.

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OHIO IMPROVED CHESTER WHITE

Weaned pigs both sexes ready for shipment after May 1, from big aged sows and by boars of extra heavy bone.

All Stock Cholera Immunized

Certificate of registration furnished with every individual.

Place your orders now.

C. B. CUNNINGHAM, Mills, Sacramento Co., Cal.

Veterinary Questions.

[Answered for the PACIFIC RURAL PRESS by DR. E. J. CREELY, San Francisco Veterinary College.]

INDIGESTION.

To the Editor: I have a cow—apparently in good health—eats well but while eating and afterwards while chewing her cud, she belches, making a noise like a forcing cough and throws up a bunch of food chewed

very fine. This does not happen often, probably two or three times during the day. She seems in good health otherwise. What is wrong?—B. W., Gilroy.

Fermentation due to indigestion. Give a heaping tablespoon of soda bicarbonate twice daily and feed dry food in preference to slop.

LOOSE SWELLINGS ON THROAT.

To the Editor: Kindly advise me as to what is the best treatment for a cow that has two large hard lumps on her throat. They are not on the bones but hang down loose just under the skin.—J. M., Chico.

I am suspicious of these enlargements being tubercular. Test with tuberculin. Apply iodine and ether equal parts once daily and lance if they become soft.

GLANDERS SUSPECTED.

To the Editor: I have a mare that has a discharge from the nostrils of a thick yellowish matter, has been affected for over a year. Think it is nazel gleet. Can you give me a cure, and is it contagious?—C. W. W., Fallon, Nev.

Have this animal tested for glanders by a qualified veterinarian. I recommend Dr. Yancey of Reno, if none are nearer.

ALFALFA SILAGE.

To the Editor: I think of building a silo of 2x4's laid flatwise to make it octagonal about 14x32 feet. Must it be air and water-tight or will the silage fill the cracks? Alfalfa and a little corn is all I have to fill it with. Should the alfalfa be taken right from the mower to be chopped?

Should any salt be used? How much should the alfalfa silage be tramped? Is alfalfa silage better feed than alfalfa hay? How long would a silo of that size feed 20 cows with all they want to eat? What is good for warts on calves' heads?—J. M. M., Fort Jones, Siskiyou county.

[Octagonal silos are wasteful because silage in settling leaves air spaces at the corners where it rots. The inside of a silo should be round and smooth, and practically air tight, for it spoils in a few days wherever air touches it. Take the alfalfa direct to the cutter, chop it fine, and tramp it thoroughly to exclude all air. If it has dried a bit, sprinkle liberally as you cut. A little salt won't hurt but some more might be disastrous to the cows. The safest way to feed salt is not to mix it with feed. The silage is succulent, is an appetizer, cows will probably change more of it into milk and butter fat than they would of dry hay.

A circular silo 14x34 holds about 115 tons which will feed 20 cows eight or nine months. If the warts on your calves are large, the best way is probably to cut them out with a sharp knife and if the wound bleeds badly, sear it with a hot iron. If they are small, apply pure acetic acid drop by drop until the warts are thoroughly softened. They will drop off within ten days.—EDITOR.]

TEACH THE NEW CALF TO DRINK.

To the Editor: What is the best way to handle a fresh cow, let the calf suck for several days, or take the calf

What a DE LAVAL CREAM SEPARATOR SAVES over any other separator or creaming system

QUANTITY of cream that no other separator will recover completely, particularly under the harder conditions of everyday use.

QUALITY of cream as evidenced by De Laval butter always scoring highest in every important contest.

LABOR in every way over any gravity system, and also over any other separator, by turning easier, being simpler, easier to clean and requiring no adjustment.

TIME by hours over any gravity system, and as well over any other separator by reason of greater capacity and the same reasons that save labor.

COST since while a De Laval Cream Separator may cost a little more than a poor one to begin with it will last from ten to twenty years, while other separators wear out and require to be replaced in from one to five years.

PROFIT in more and better cream, with less labor and effort, every time milk is put through the machine, twice a day—or 730 times a year for every year the separator lasts.

SATISFACTION, which is no small consideration, and can only come from knowing you have the best separator, which is no small consideration, and can only come from knowing you have the best separator,

with which you are sure you are at all times accomplishing the best possible results.

EASILY PROVEN—these are all facts capable of easy demonstration and proof to any user or intending buyer of a cream separator. Every De Laval agent is glad of a chance to prove them by a De Laval machine itself—without the slightest obligation on your part unless entirely satisfied.

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NEW YORK

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1016 Western Avenue
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50,000 Branches and Local Agencies the World Over.

away as soon as it is dropped and milk the cow from the start? What is the best treatment for caked udder in fresh cows?—A. B., Colton.

[The answer to the first question is to be found in 1000 questions, page

204; the second is answered on page 221. If you have, like the writer, taught calves to drink after sucking the cow several days, you know the greater trouble with both the calf and the cow.—R. E. HODGES.]

9 BULLS 9

REGISTERED SHORTHORNS

9 to 13 months old. In fine condition.

H. L. MURPHY

Perkins, California

Horse Owners! Use GOMBAULT'S



Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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Drop a line to Dr. Korinek today and ask for his FREE list of remedies—if you have a sick animal on the place now write at once for FREE advice.

Dr. C. J. Korinek is a graduate of Ontario Veterinary College of the University of Toronto. He has practiced over 12 years, has been Oregon State Veterinarian under two governors and served four years as president of the Oregon State Veterinary Board.

Dr. Korinek is a Veterinarian of National Reputation

The FREE Consultation Department of Dr. Korinek's is doing a great good for farmers all over the Pacific Coast. He answers by personal letter all inquiries regarding sick animals absolutely free of any cost.

Write for literature. Free sample of Dr. Korinek's Gail Powder upon request.

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Shaw Bunch Rakes

Made especially for heavy work that no other rakes are fit for. Primarily made to bunch hay out of wind-rows, also to do any heavy work such as raking corn-stalks, sage brush, etc.

High wheels, rigid teeth, strong, rigid frame.

Descriptive Literature on Request THE H. C. SHAW COMPANY

Manufacturers

56 N. CALIFORNIA ST.

Stockton, California

Grain-Raised Hogs.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Many farmers question the advisability of feeding a part grain ration to hogs from the time they are weaned until sold, preferring to raise the stock on alfalfa or skim-milk, and grain them for a month or two before marketing.

"That this practice is not the best, seems to be pretty thoroughly demonstrated on the ranch of W. F. Bernstein, near Hanford, Kings county. While Poland-Chinas are raised there for breeding purposes entirely, the growth and condition of the hogs obtained by his method shows that where one feeds a little grain all of the time the hogs are always in good condition, and it does not require any more total grain than where they are fed heavily only at finishing-up time.

guard against future attacks of the cholera, all of the stock has been inoculated with serum, and no ill effects were seen.

In the belief that the coming Poland-China hog will be of neither the extreme large type, nor small as we now know them, Mr. Bernstein is endeavoring to breed a happy medium by the use of large-type boars on medium-type sows, and believes that the offspring from this cross will be a hog that is a better all-around type than either of the others. With that end in view, he is using one large-type boar, by the name of Kings Wonder, an animal recently shipped from the East, on three fine young medium-type sows.

As the market for registered stock is better than ever before, it is the intention to increase the size of this herd from this time onward, and plans



Poland Chinas of W. F. Bernstein—Boar and Sow, 1350 Lbs.



Poland China "Queen of Kings," 15 Mos., With First Litter of Six Pigs.

The method of grain feeding on this ranch is perhaps different from most farmers' practice, as Mr. Bernstein owns a bakery as well as a ranch, and the principal grain feed comes in the shape of stale bread and cakes. This with all of the alfalfa they care for, is the ration used; and that it is a profitable one is shown by the fact that four sows, in ordinary breeding condition weighed over a thousand pounds at nine months of age. They could have been made to weigh a great deal more by adding extra grain for the last week or two, as hogs raised in this way respond much quicker to a heavy ration than those that have not been used to any grain.

GRAIN-FED BREEDING STOCK O. K.—It is often claimed that breeding stock, fed some grain all of the time, are apt to be poor breeders, as they are too fat, but 'it has been found on this ranch that a sow fed this way from time of weaning, has just as large litters and that the pigs are far more robust. An instance of this was seen the past winter, when three gilts farrowed 15 pigs and raised all but one of them, after having been shipped several thousand miles and vaccinated for cholera. Many commonly suppose vaccination will cause a sow to lose her litter, and for this reason will not use the serum. In order to

are being made to show at the coming State Fair as well as at the Panama Exposition in 1915.

MOCK SILAGE.

Silos are ordinarily filled with green forage chopped fine. But in some of the Northern States many farmers who haven't silo room to store the entire corn crop and all the feed needed have hit upon a plan of cutting and shocking the surplus corn after the silos are filled and later filling the silos with it. When the silage is fed out, or where there are several silos, when one or more are emptied, the dry shocks of corn are chopped, as the green corn was, and put into the silo, a sufficient quantity of water being put in along with it to take the place of the dried-out juices. It ferments as did the green ensilage and becomes succulent and very superior as a feed to the dried shocks. In fact, it is almost equal to good corn silage, says A. L. Haecker, the well known silo and silage authority.

RHOADES & RHOADES EXPERT LIVE STOCK AUCTIONEERS

Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.

1501-3-5 So. Main St., Los Angeles.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, Cal.

Breeder of

SHORT HORN CATTLE SHROPSHIRE AND MERINO SHEEP

ATTENTION, SHEEPMEN

My pure-bred, range-raised yearling Shropshire and Merino rams will be out of mountains about April 15 and ready for inspection at my place.

Shropshires sired by rams imported by me from England in 1911.

Salvador Stock Farm



Having just received a fresh importation of Shire Stallions, which I wish to close out this spring, I am offering them at reasonable prices.

Henry Wheatley
NAPA, CAL.

America's Leading Horse Importers

PERCHERONS



"Our recent importation arrived at our Oakland stables March 1st. This shipment comprises the best lot of stallions ever shipped to the Pacific Coast. Every horse in the lot is sound, young, stylish and of the best conformation.

At the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons; two Second Prize ribbons, and other honors.

If you want the BEST let us hear from you."

McLaughlin Percheron Company
Kansas City, Mo. Oakland, California

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

WAUKEEN STOCK FARM

Offers some choice Poland-China gilts, both bred and open. All full sisters to one a breeder offered me \$75 for at 12 months old. \$10 up.

CHAS. N. ODELL, Modesto, Cal.

POLAND-CHINA HOGS

LARGE TYPE

YOUNG STOCK FOR SALE. BOTH SEXES.

THE BROWNING STOCK FARM.

W. H. Browning, Prop.

Woodland, Cal.

Second Hand PIPE Screw Casing

ALEXANDER PIPE COMPANY

OFFICE—254 No. Point Street, San Francisco, Cal.—WORKS
1611 E. 6th Street, Los Angeles, Cal.

With the Live Stock Men.

The growth of the live stock industry in California between the years 1910 and 1913 shows greater increase than in any other of the 17 States west of Missouri. According to statistics recently issued by the U. S. Department of Agriculture, the total number of live stock in California in 1913 was 1,964,000 cattle, 503,000 horses, and 2,603,000 sheep; these figures showing an actual increase for the three-year period of 392,000 cattle, 83,000 horses, and 231,000 sheep.

Argentina's live animal imports increased in 1913 by \$830,490, or over 150% over 1912. Her exports of live stock products fell off \$21,600,000 to a total of \$160,000,000.

J. E. Richards, government stock inspector, last week appointed George T. McCabe, secretary of the Stanislaus Board of Trade, to report crop and live stock prospects to the Government.

Dairy Inspector C. A. Peairs reports Tulare county green forage and grain to be making immense growth and alfalfa being cut. Fall grain is headed out.

Choice steers went higher at the Portland Union Stock Yards last week; hogs down, and sheep about the same as the week before.

Dairying.

J. E. Thorp, secretary of the California Jersey Breeders' Association, calls attention to the silver cup to be awarded annually by the California State Agricultural Society for the Jersey Futurity.

Phillip Duffy, of Napa county, has sold his 52 head of dairy cattle to McCart & Howard, of Reno, Nevada. He will hereafter raise beef cattle only.

N. H. Locke, of Lockeford, reports sold his Jersey bull, Lady Kate's Fox, er's King of L, to S. Viercamp, of Placerville. This calf is from the St. Alembert bred dam Brown Power, and was sired by King of L. To E. A. Putnam, of Clements, he sold Jersey bull calf, Dolly's Laddie of L, from St. Alembert-bred Dolly and Golden Laddie.

E. B. McFarland, of Sand Mateo, sold a 10-months-old Ayrshire bull for \$250 to the Sullivan Investment & Realty Co. to improve their grade herd at Grass Valley.

D. F. Conant, of Stanislaus county, sold his Jersey bull, Lady Kat's Fox, 118780, to W. H. Brink, of Modesto. This bull's dam made 456 pounds fat in 309 days and has given 54 pounds milk in one day.

N. E. Mulick, of Glenn county, sold two carloads of Holsteins to an Imperial valley stockman. Mr. Mulick is a Holstein pioneer, having gained his inspiration in Wisconsin.

A six-year-old Holstein owned in New York recently completed a seven-day record of 6602 pounds milk, 4.38% fat, making 28.921 pounds. At the same time her thirty-day record was completed, showing 104.88 pounds fat.

The Lakeview Creamery, of Kings county, paid 33 cents for February sweet cream, totaling \$9,000.

A. O. Becraft, of Tulare county, has taken over the Lindsay Dairy Co.'s business and will supply city milk from a new sanitary plant.

Tulare county has a new co-operative creamery company, temporarily organized last week. A \$6,000 plant is to handle cream from 1,000 cows.

D. M. Herron, of Kings county, hopes soon to ship two carloads of bottled cream and milk a day to Los Angeles, by consolidation of three local creameries. An ice plant is to be built on the Santa Fe at Corcoran.

The Jersey Breeders' Association objected to housing conditions at the State Fair, and wish to thank the management for heeding their suggestions.

Frank Marshall, of Fresno county, is to sell, on April 8 and 9, fifty head of registered stock and 185 grade cattle, horses, and hogs.

G. C. McFarland, J. A. Cowan, and R. Lemke, of Tulare county, and the Lamberson ranch in Kings, have recently installed milking machines.

The first Imperial county creamery was started eight years ago. Now there are eight creameries, with a butter output valued at \$2,000,000 a year, and 100,000 acres of alfalfa.

Beef.

Thirteen hundred carloads of fat cattle were shipped from Imperial valley last year. Cotton seed and hulls are being used by one man to fatten cattle.

Joseph T. Brooks sends us a photograph of three two-year-old triplet heifers owned by Mrs. M. Hildinger of San Jose. They are Hereford sired and all are marked just alike.

Beef cattle sales on the Chicago market for the week ending March 24 ranged \$7 to \$9.70, the corresponding week in 1913, \$7 to \$9.35; 1911, \$5.25 to \$7.05; 1909, \$4.75 to \$7.35; 1907, \$4.25 to \$4.60.

W. H. Cooper, of Lovelock, Nevada, recently drove 100 head of high-grade cattle to his ranch in Pleasant valley.

W. D. Mitchell, of Fresno county, has bought 1000 grade Herefords from northern Arizona.

The annual meeting of the Oregon Cattle and Horse Breeders' Association was recently held at Pendleton, including men from Washington and Idaho. New officers were elected and a resolution adopted favoring the appointment by the Governor of county stock inspectors who would examine all cattle passing from one county to another. Inspection of hides and records of slaughtering were favored as a preventive of cattle stealing.

Florida cattlemen are being encouraged by the state veterinarian to dip their stock to kill the ticks. Those who have done so write letters of great satisfaction. Four dippings a year put the cattle in much better shape than only one.

The Department of Agriculture is busy convicting and fining shippers of meat which was unfit for food.

Jack London, of Sonoma county, recently bought several draft horses from Paul Snowden of Modesto.

The Chicago Live Stock World says that draft horses are "mighty scarce" on the Pacific Coast from Vancouver to San Diego.

J. W. McCord, of Kings county, shipped a young jack last week to Kansas. This is the right direction for more pure-bred stock raised in California to go.

Swine.

Rand Avery, of Porterville, has imported Duroc hogs from McFarland Bros. of Missouri.

H. J. Withey, of Stanislaus county, recently bought four pure-bred Berk-

shires from W. D. Trehwhitt, of Kings county.

M. T. Engle, of Stanislaus county, bought a white Yorkshire sow from T. H. Canfield of Minnesota.

G. A. Murphy, of Sacramento county, has imported Berkshire pure-breds from Missouri, Kansas, and Kentucky.

Sheep.

Guy Saval, of Winnemucca, began shearing 8,000 sheep last Saturday. Charles and Peter Garteiz had just finished 7,000.

The first wool of the season was shipped last Saturday from Reno to San Francisco.

American wools graded and marketed as attractively as Australian wools would bring three cents a pound better price to the grower than they do now, according to the U. S. Department of Agriculture.

Up-to-date sheep stealers in England use motor cars and cannot be caught by the armed guards which patrol the flocks by night.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

THOROUGHbred JERSEY-DUROC HOGS—Most prolific, hardiest and safest hogs to breed. Weanlings, \$10 to \$15; bred gilts, \$25 to \$60. D. R. Price, Ellsworth, San Joaquin Co., Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State \$30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, \$15.00 up. Ed E. Johnson, Turlock, Cal.

THOROUGHbred BERKSHIRES—Boars of all ages. Riccomi Bros., Mountain View, Cal.

TAMWORTHS. The finest bacon hog All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS, large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Heary, Farmington.

DUROC-JERSEY BOARS—Weanlings. Lindquist Bros., Turlock, Cal.

TAMWORTHS—The largest bacon breed. Address Box 296, Fallon, Nev.

CHAS. GOODMAN, Breeder of High Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stow, Stockton, Cal.

HORSES AND MULES.

MULES—For sale or trade for draft horses. 60 head of first-class mules from three to eight years old, weighing from 1100 to 1400 pounds. Mules at Linden Stock Farm, 15 miles north-east of Stockton. Address Linden Stock Farm, Linden, or W. H. Hord, 704 Market St., San Francisco.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

PURE-BRED MAMMOTH JACKS. Prices reasonable; terms liberal. I desired will take as payment get of jacks at weaning. J. E. Dickinson Fresno.

REGISTERED JACK No. 4157 for sale or trade for team of 1300 or 1400-lb. 4 to 5-year-old mules. W. F. Cummings, Healdsburg, Cal.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

AYRSHIRE—THE PERFECT COW—Steybrae Ayrshires. Have for sale fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, address E. B. McFarland, San Mateo.

YUBA DAIRY CO.—Fine herd of Holstein and Durham cows for sale; 75 head of heavy milkers, all in good condition. Write to Marysville, Cal., for further information.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

FOR SALE—50 very high-bred grade Holstein heifers, from 18 to 24 months old; all bred to purbred sire. E. J. WELDON, Box 962, Sacramento.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder. Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Millitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

WANTED—Ten to 12 young beef cattle near Redwood City. State age, kind and price. J. M. Huddart, Woodside, San Mateo county.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS—Gay Lad 6th head herd O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Ramboulllets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Ramboulllets. Hanford, Cal.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

Get Market Prices for Eggs.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

Farmers and poultrymen are about the only business men that allow the other fellow to set the price both ways. Go into a store to buy a suit of clothes and very naturally you ask the man at the counter what his price is. Take a basket of eggs into a grocery store and tell the grocer you want so much a dozen for your eggs and he thinks, at least he looks as though he thinks, you are an escaped lunatic. This is because you have let him set the price so long on your product as

well as his groceries.

This condition has come along with other old things from a generation long past when things were quite different than they are at this time. Nearly everything under the sun has changed, especially in business methods, except the method of selling farm products and barn yard commodities.

The citrus growers have organized; and from having to take just what they could get, their product is shipped and sold at market prices; but the same man who sends his oranges to the Exchange will pack a basket of eggs into town and ask the grocer what he is paying for eggs. The price may be anywhere from 3 to 10 cents a dozen less than some other grocer or buyer will pay, but what he offers goes with Mr. Farmer, because he does not realize that he has a right to set his own price or even get a market price. Now this is all wrong and the grocer is not to blame for the conditions, he only does what all of them do, and they do it because the farmer lets them.

Not every farmer can figure up the cost of his eggs, for the reason that he has waste products that his fowls pick up, he has green feed that costs but a little labor and a little land to produce, but the man who has not the land or any of the waste products, and must pay high prices for feed is forced to sell under the same conditions as the man who has, and this works an injustice to the landless man who is trying to make a living with poultry.

And so for this reason, if no other, the farmer should post himself on the market price of what he has to sell and demand that price. This act of justice to himself and fellow workers will put starch in his backbone and make him respect himself better than he ever did when he asked Mr. Grocer how much he was giving for 'aigs.'

ENGLISH HENS LEAD.—We are going to try a new departure this week, sometimes you know the doctor says a change of diet is good, our publisher says he thinks a change of program will be good. This only means that readers will have to train their eyes to the follow up methods of the big magazines, the diet will be the same really but it will be served up "a la mode" "alle samee Melican style."

Just this morning I happened to pick up a February number of the PRESS and read our Editor's confession about "lying," about train boys selling lettuce heads, and mind you that was in the same month that the Father of our country, the man who never told a lie was born. Now we see once more the awful truth brought forth, "that the only good men are dead men," truthful James will please take the head of the class.

And now to business. M. Quisenberry's report from the National egg laying contest is that the English birds lead again. And these birds belong to the same man whose birds won last year. He says: "The English pen of S. C. W. Leghorns has a lead of 104 eggs over its nearest competitor, and it looks as if they mean to set a live pace for others to follow. They won the silver cup for January by laying 221 eggs. They have averaged 43 eggs per hen for December and January."

Here are the best records up to date:

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

IN SPITE OF ADVERTISING "BABY chicks all sold" we have received many inquiries for chicks and have now installed another incubator room, which brings our total hatching capacity to over 5,000 eggs at one time. To introduce our stock in as many localities as possible, we have made the following special prices for the balance of the season. White Leghorns—Eggs \$1.50 per 15, \$2.50 per 30, \$6.00 per 100, \$50.00 per 1000; chicks, \$7.00 per 50, \$13.00 per 100, \$125.00 per 1000. Cockerels, \$2.50 each; no females for sale. White Plymouth Rocks—Eggs \$2.00 per 15, \$4.00 per 30, \$8.00 per 100. Chicks, \$11.00 per 50, \$20.00 per 100. Cockerels \$3.00 each, pullets \$2.50. Address Dept. 2, Newton Poultry Farm, Los Gatos, Cal.

OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for April and May, \$9; reduction in quantities. San Jose Hatchery, 273 Meridian Road, San Jose, Cal.

C. WHITE LEGHORNS—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected hens, bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

MURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

FREE—66-page catalogue, describes in detail prices, etc., on 19 kinds of baby chicks, hatching eggs, incubators, brooders, etc. We ship everywhere. The Pioneer Hatchery Co., 112 E. 8th St., Los Angeles, Cal.

EGGS FOR HATCHING—Pure-bred stock; Buff Orpington, Toulouse geese, Pekin duck, Buff Cochins bantams, Pearl guineas and pheasants. L. R. McCoy, R. F. D. No. 1, Box 205, Stockton.

ORPINGTON BREEDERS ATTENTION. After April first I will sell eggs from all yards at \$2.50 a setting, both Buff and White. Mrs. S. Swaysgood, R. 2, Pomona, Cal.

FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

RINGNECK PHEASANTS for sale. J. D. Morris, Agua Caliente, Cal.

ORDERS TAKEN for day-old chicks and eggs for hatching from the following breeds: White Leghorns, Buff Orpingtons, White Wyandottes, Rhode Island Reds, Black Minorcas, Barred Plymouth Rocks and Light Brahmas. All good laying stock. Eggs \$1.50 per 15. White Leghorn day-old chicks \$10 per hundred, and all other breeds \$15 per hundred. For further information address Mrs. I. H. Tuttle, Box 473, Watsonville, Cal.

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities; \$9.00 per 100, \$35.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande, San Luis Obispo County, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

ORDER MAMMOTH BRONZE TURKEY eggs from largest turkey ranch in Stanislaus county; \$3 per setting. Address Crows Landing Turkey Ranch, Box 227, Crows Landing.

FOR SALE—White Plymouth Rock eggs for hatching. Selected stock. U. S. Fishel strain. \$2 per setting. Special prices on large orders. Mrs. J. B. Tupper, Ceres, Cal.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

INCUBATOR CHICKS—White Rock, Black Minorca, White, Brown and Buff Leghorns. All high-class stock. Send for booklet of prices. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

WHITE HOLLAND TURKEYS—Prize-winners San Jose, 1913. Stock and eggs for sale. R. H. Brotherton, Los Altos, Cal.

WOODHAVEN FARM BUFF ORPINGTONS—Bred for size and winter laying. Choice stock and eggs for sale. Mrs. C. M. Smythe, R. 3, Stockton.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

MAMMOTH BRONZE TURKEY EGGS from the largest and best stock in the West. Special prices. Geo. A. Smith, Corcoran, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BARRED ROCKS ONLY—Am booking orders for eggs and chicks for March delivery. Send for folder. G. L. Hawley, Madera, Cal.

CHINESE AND SILVER PHEASANTS eggs; also Pearl Guinea eggs. E. W. Leffler, R. 1, Box 193, Stockton, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties. L. W. Clark, Petaluma.

LIGHT BRAHMAS. Breeding stock for sale. Eggs for hatching \$2.50 per setting. Box A. B., Pacific Rural Press.

PETALUMA BROODER STOVE, Haywards, Cal. Best on market. Latest improvements. Catalogue free.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

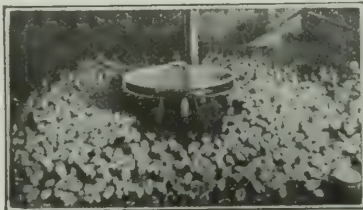


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giving a full account of hatching, raising, and caring for chickens, with details of a Complete System of Feeding.

Will be sent to you on application

COULSON CO.
Box E Petaluma, Cal.



THE FRESH AIR BROODER STOVE

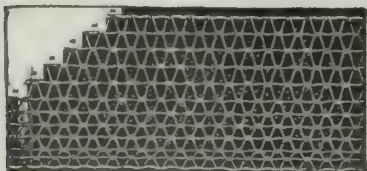
It supplies the chicks with PURE, WARM, FRESH AIR THROUGH THE BASE. Reduces former oil bills one-half and regulates to a degree.

We manufacture brooding systems of all kinds.

Get Our Catalogue.

J. E. KRESKY, Petaluma, Cal.

KOKOMO Self Regulating FENCE



STRONG Because it is made of large High Carbon Steel Wires.

DURABLE Because it is double galvanized and all wires interwoven and securely locked at each intersection.

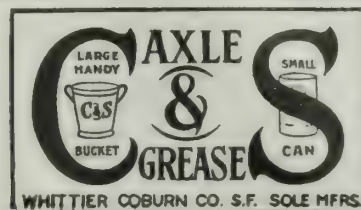
CHEAP Because it is sold by actual weight at DIRECT FACTORY PRICES.

Write for catalogue and price list.

CALIFORNIA ANCHOR FENCE CO.

822 E. Main St.

Stockton, Cal.



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Circular containing 100 mechanical movements mailed free.

Don't send to Chicago, or Seattle—
Send here.
Our prices are just as low—
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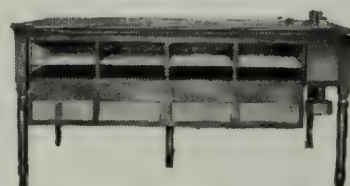
POULTRY SUPPLY CATALOGUE JUST ISSUED

Grocery Supply Catalogue for April and May A postal card brings them. Our spring General Catalogue will be off the press April 15th. File your request for it NOW.

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EGG LAYING CONTEST LED ALL THE WAY

At the Napa Egg Laying Contest our pen finished second, 66 pens competing. In our own class, White Leghorns, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

BLOM & SON, Napa, Cal.

White Leghorns made the best English record with 427 eggs.
Buff Orpingtons best United States record, 323 eggs.
Buff Leghorns best Missouri record, 286 eggs.
White Leghorns best British Columbia record, 226 eggs.
White Leghorns best New Zealand record, 205 eggs.
White Leghorns best Vancouver Island, 199 eggs.



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is the most efficient pump of this type on the market and the simplest in construction. Every JACKSON pump means the best possible pumping economy.

The JACKSON is a pump of the highest service giving quality; it's just the pump you need on your farm.

Bulletin No 47-C on request.

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SAN FRANCISCO, OAKLAND, ANTIOCH & EASTERN RY.

White Wyandottes best Ontario record, 196 eggs.
White Leghorns best Australian record, 158 eggs.
White Leghorns best South African record with 127 eggs.
Mr. Quisenberry explains, however, that most of the foreign birds have been out of condition and suffered greatly from long shipment and change of climate. They were all two to six weeks on the road, and many of them will never recover from the effects of the trip and change of climate. Some few have died already.
It is interesting to know how the different breeds come out in these contests, but unless it spurs the individual poultryman to renew his efforts in the building up of his own particular flock it is of very little practical use. It certainly is encouraging to learn that one pen of the heavy breeds made the best record for the United States. Orpington breeders should take that as an example and breed up.

Don't let us all get crazy on the English birds, there are just as good at home, and no risk or fear of them dying from a long trip and change of climate. A few weeks ago I buried a costly bird that had come from the other side of the "herring pond," and he had been here a year but did me not a bit of service. If I had bought a home-grown bird he would be alive today.

GREEN BONE AND FERTILE EGGS.—"I have been feeding green cut bone but a friend tells me it affects the liver of hens and causes infertile eggs. Now as I want to breed from my hens am in doubt about feeding it, please advise."

If green cut bone is fed while it is fresh I am quite sure it will not injure the fertility of the eggs; but as it spoils very easily it may cause indigestion if fed after it has decayed. It would be better to partly cook it if there are any signs of decay. Whatever affects the digestion does, either directly or indirectly, affect the liver but not so much as to cause any trouble unless it is kept up a considerable time. Green cut bone is really an aid to fertility because it helps make strong vigorous chicks, but of course like all other good things it can be overdone.

PAINT ROOSTS FOR LICE.

To the Editor: I notice a question asked: "What will destroy chicken lice?" Here is something I have used for five years, and it is a sure way if properly applied. Avenarius carbolineum can be purchased at any hardware or implement house. Paint the roosts once every six months and you will not be bothered with lice or mites. It can also be placed in the bottom of the sitting hen's nest. The woodwork must be thoroughly cleaned before applying.

SAM THOMAS.
Modesto.

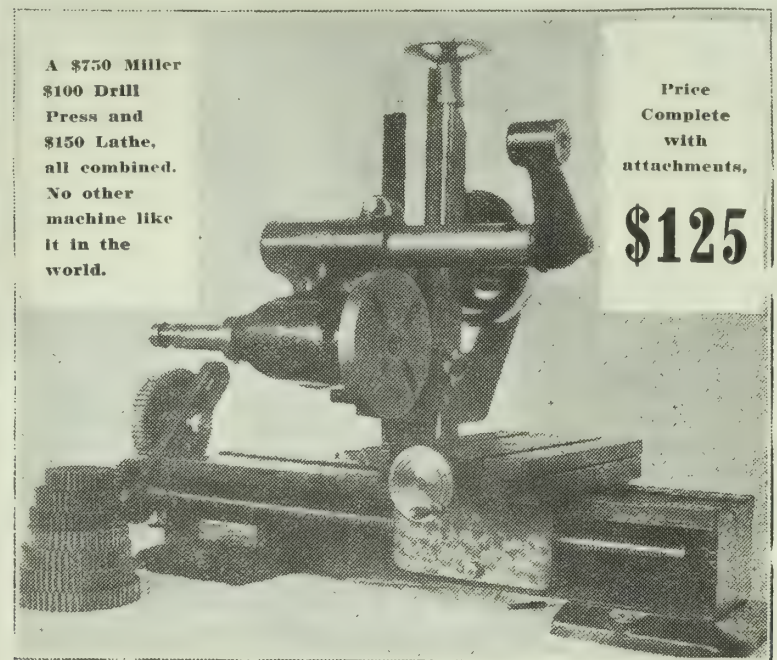
TO GET RID OF FLEAS.

To the Editor: Could you tell me something to rid my place of fleas? Last summer they were terrible, and this year, having so much rain, I thought sure I would not be bothered, but they have started stronger than ever.—R. A. S., San Gregorio.

[We have published several readers' experiences during the last year showing that "naphthalene flakes," scattered freely in infested places, readily make way with fleas.—EDITOR.]

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A \$750 Miller \$100 Drill Press and \$150 Lathe, all combined. No other machine like it in the world.

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Montague casing put in wells in Santa Clara County 50 years ago giving good service today.

557 Market St., San Francisco

An inter-departmental committee, formed of bureau heads by order of Secretary Lane, Secretary Houston, Secretary Garrison, and Secretary Redfield, who acted at the request of the President, are gathering and collecting all the data in the hands of the Government bearing on the work to be done under the proposed Newlands-Broussard river regulation and flood prevention bill. They have reported in

its favor and the National Reclamation Association with headquarters at New Orleans, the River Regulation Commission of California with headquarters at Stockton, the Pittsburgh Flood Commission with headquarters at Pittsburgh, are conducting a nationwide educational campaign in its behalf, making very rapid progress in bringing the business men of the United States to the support of the measure.

The Home Circle.

Growing Chrysanthemums.

In the fall when the best roses are gone for the season, when there are none of the spring flowers, the chrysanthemum fills a place that makes it very welcome in all well kept homes. The recent discoveries in growing 'mums have made this plant more valuable than ever, and now anyone may have large "cold slaw" bouquets grown by the amateur in almost every location.

April is the time to set out the plants to their permanent location, and from John Vallance of the Morse Seed Co. we get most of the following directions for care:

To obtain large blooms of this beautiful fall flower it is necessary that especial care and culture be given them. Young plants must be obtained; one shoot is allowed to grow and all side growth is kept nipped off, so that the strength is allowed to go into the main stem.

The plant is kept growing in this manner but should a flower bud appear on the end of the stalk before the date set (at the end of description of each variety) this also must be nipped away. We will take the "Alliance" as an example. The date is August 20th, but should a flower appear, say about July 20th, this must not be allowed to grow; but taken away and a new bud will follow which ought to be about the size of a pea about the 20th; then all attention must be given this bud, and the plant be kept liberally fed with manure and bone meal applications. If the bud which had formed, we will say July 20th, had been allowed to grow, the flower would have been much inferior to that bud

"taken" at correct date, namely August 20th. This will explain, we think, the meaning of the dates after each variety. Of course, judgment will have to be used; for instance, should a bud appear two weeks before date, it would be well to leave that one. The best planting time is during April and May.

When the buds begin to show color, and even before, the plants should be well fertilized with liquid manure every week or with a cupfull of bone meal every other week. Give them plenty of water, and you will have lots of big blooms for your trouble. Here is a list of varieties of chrysanthemums suggested for open sunny places in most parts of the State:

Beatrice May. Pure white, Japanese; incurved. (10th of August.)

Colonel Appleton. Golden yellow, Japanese; incurved; one of the best, late bloomer. (15th September.)

Marion Hakey. Bright pink; broad petals of great substance. 15th August.)

Mrs. J. E. Dunne. Salmon terracotta, Japanese; a distinct and novel sort. (20th August.)

Mrs. H. J. Jones. Glistening white; large incurved. (15th September.)

Mrs. Robinson. A good, early incurved, pure white. (5th September.)

Major Bonnapon. The most widely grown of the yellow sorts for commercial purposes. (10th September.)

Queen. A very fine silvery white. (20th September.)

Wm. Duckham. Pink, Japanese; one of the best of its color for all around purposes. (20th August.)

Chrysanthemums should be protected with cheese-cloth a few weeks before blooming time. These few remarks may help the novice in the growing of this plant. To obtain a large flower, it requires a good deal

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Write for catalogue.

of experience, and it may take quite a few trials before success is attained.

"Uncle Jack," said a young lady, who was spending a few days in the country, "is that chicken by the gate a Minorca?"

"No," replied Uncle Jack, "he is a Leghorn."

"Why, certainly," said the young lady. "How stupid of me! I can see the horns on his legs."

Cardinal Manning used to relate the following: An Irish waiter, on being asked at what o'clock the first train left in the morning, answered, "You see, sir, the seven o'clock train now goes at eight o'clock, so there isn't no first train at all, at all."



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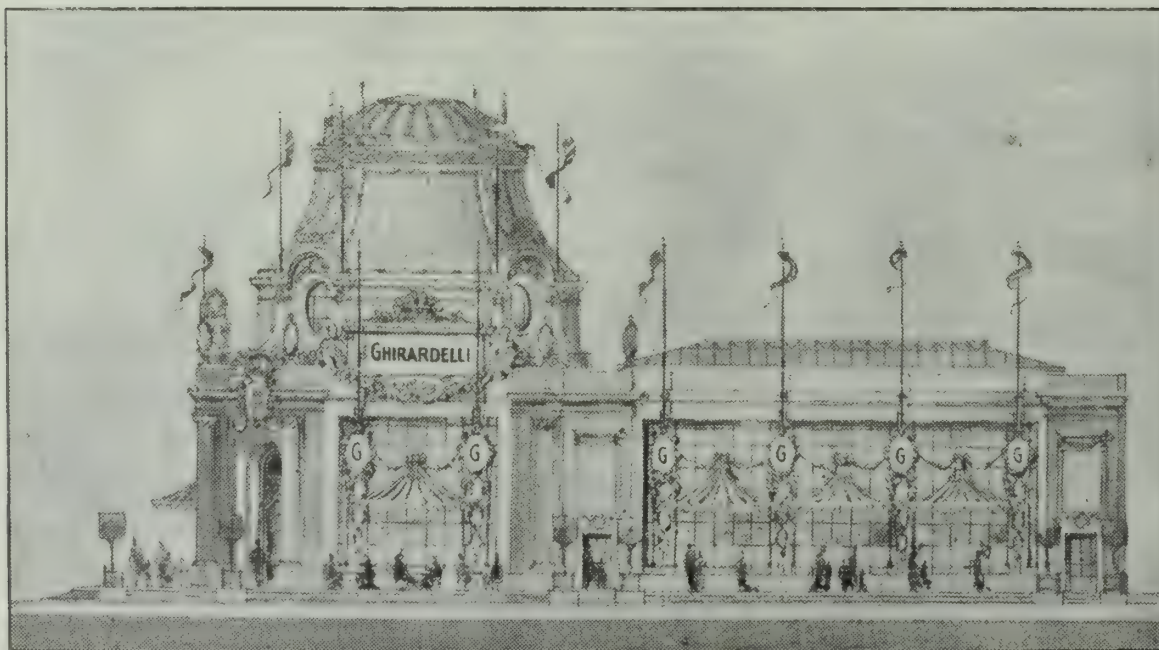
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D. Ghirardelli Company to Have Magnificent Exhibition Building at Panama-Pacific Exposition.

The above illustration pictures the beautiful edifice that will soon be erected by the D. Ghirardelli Company to house its complete exhibit at the Panama-Pacific Exposition. It was designed by Blakewell & Brown, the well-known architects, who were awarded the prize for their design of San Francisco's new City Hall.

The building is to occupy a ground space of 50x110 feet, and will have

open exposure on three sides. It will be finished in the most complete and artistic manner, and will cost not less than \$20,000, exclusive of the cost of manufacturing machinery and the installation of same.

The machinery itself will represent an investment of \$10,000, and will exhibit a complete single-unit plant. The entire process of manufacturing eating chocolate will be shown in full operation. All the chocolate made in this plant will be wrapped and sold in the building.

The remainder of the structure will be devoted to the serving of Ghirardelli's Ground Chocolate and Cocoa to

demonstrate not only the distinctive flavor of Ghirardelli's products, but the fact that chocolate and cocoa, like all drinks, can be made much more delicious by proper preparation.

One of the best locations in the grounds has been secured for the Ghirardelli exhibit. The building will be erected within a few steps of the Fillmore street entrance, right opposite the Service Building, and is the first building at the commencement of the Concession Division.

The working plans of the building are now under way, and construction work will be commenced at an early date.

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Two-Horse Brand Overalls

The kind that is made for comfort and long wear.

A New Pair **FREE** If They Rip

Made By
LEVI STRAUSS & CO., San Francisco

Our Young Folks

The Fairy Bicycle.

Billy came into the little arbor, just large enough for two small chairs, and began to cry. "What is the matter, Billy?" asked his sister, who was always kind to him.

"I want a bike," said Billy. "Teddy Thompson has got one, and I asked papa for one; and he says it isn't convenient just now, and I don't want to be alive if I can't have one. Oh, dear! oh, dear!"

"Billy," said Letty, "I wish we had a fairy godmother to come down chimney, like Cinderella's did, and give you one."

"Did the fairy godmother give Cinderella a bike?" asked Billy.

"Well," said Letty, "Cinderella didn't want a wheel, but the fairy gave her what she asked for. I'll read you the story if you like."

It was a girl's story, Billy said, but it was a nice story; and he just wished their fairy godmother would come along, he'd ask her for a bike.

Then Letty took her doll out for a walk; and Billy lay still upon the grass, watching a long bar of golden sunshine that fell through the vine leaves overhead, and wishing he could climb it and go straight up to the sky, and then come gliding down as if it were a toboggan slide, until suddenly he saw somebody doing exactly the same thing. Somebody, but really it was so small that at first he could not believe that it was a somebody. Only when it came down beside him, and, jumping to its feet, made a bow, was he sure that it was a little man, not a foot high, dressed in green, with a peacock's feather in his cap and a long silver wand in his hand.

Then a sudden hope sprang up with-

in him. "Who are you, please?" he asked.

"Your fairy godfather, my dear Billy," replied the little man.

"I thought so," said Billy; "and have you come as the fairy godmother came to Cinderella, to give me my wish?"

"Exactly so," said the tiny man, "only I want you to listen to me first. I can only give you one wish, and can't change it after you've got it. So, when you wish, make no mistake. Ask for exactly what you want, and stick to it."

"No danger: I won't do that," said Billy. "What I want is a bike."

"That's a reasonable wish," said the fairy. "What kind do you want?"

"A fast one," said Billy. "I shouldn't care for it unless it was faster than Teddy Thompson's. I want it to scorch all the time past Teddy,—past every wheel on the road; past all the steam-cars; past everything and everybody; around the world—whew! whew! Around the world ever so many times, stopping for nothing and nobody."

"Very well, Billy," said the little man. "You shall have what you want." And he drew himself to his full height, and waved his wand; and the next moment Billy saw something whirling down the streak of sunshine. It stopped at his side; and, behold! it was a wheel,—a shining silver wheel,—with a bright blue saddle.

"Splendid!" cried the fairy godfather. "Off with you now; sure you want to go as fast as you said?"

"Faster, if you can make me," said Billy; and away he flew out of the arbor, past Letty, who screamed after him, only he could not hear what she said; past Teddy, who was scorching down hill, but was left behind in a minute; past a club of wheelmen, who shouted, "Look at that fellow!" alongside of the railway. Down came the express train, whistling and screaming; but the fairy bicycle went faster still,—on, on, on,—and here was the ocean. But the bicycle was so light and flew so fast that it didn't mind a little thing like that. It rode on the edge of the wave, and passed all the steamers, and was on the other side in a moment.

It whirled on, on, on. He did not quite know what country it whirled him into; but he knew he overset a lot of stout people, who were drinking beer as they listened to music, and heard them call out and run after him.

Then he was in a cold, cold country, where there was a great palace built of ice; and now he was going so fast and his wheel had grown so hot that he melted a place in the wall and went right through it, and over a very splendid person in velvet and diamonds, and was pursued by soldiers in magnificent uniforms, all with drawn swords, who cried out that he had attempted to assassinate the Czar of Russia in his Winter Palace.

Then, as if in a minute, over went the great wall of China. He had a picture of that in his geography, and all the Chinese were after him. On, on, on! Ocean again. America, and he was going past his own dear home.

The kitchen door was open. He smelt gingerbread baking. His mother stood looking out for him. Vainly he strove to stop the wheel. It still sped on, and he remembered that he had wished that it would go on forever. "Stop!" he cried. "Stop! stop! stop! I want to go home to my mamma."

Then,—well, then, he must have thrown himself off the fairy wheel; for he was lying on the grass. The streak of sunshine had gone. There was no fairy godfather to be seen.

And his mother was calling from the door: "Billy! Billy boy! Come! Tea is ready." And, oh, how glad he was that it was all nothing but a dream!—*New York Ledger.*

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to flies, dirt, and germs buy ground chocolate in bulk. If you do, buy Ghirardelli's Ground Chocolate in hermetically sealed cans.

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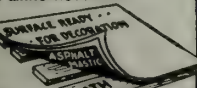
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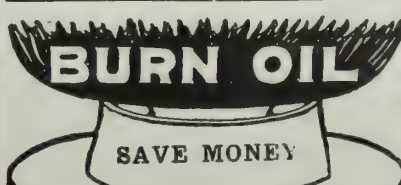


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HOME UNION 51 MARKET STREET SAN JOSE, CAL.

THE MARKETS

San Francisco, April 1, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

This market is still drawing heavily on the North for supplies, and holders in Oregon are asking stiff prices, as supplies are running low. Local values are accordingly very firm, but there is no heavy movement and quotations stand as before.

California Club, cttl.	\$1.62½ @ 1.65
Forty-fold	1.65 @ 1.67½
Northern Club	1.62½ @ 1.65
Northern Bluestem	1.75 @ 1.77½
Northern Red	1.62½ @ 1.70

BARLEY.

The easiness in this grain continues, being encouraged by more favorable weather for the coming crop, and futures are somewhat lower. Some holders are also asking less for the spot grain, but the general range of values is unchanged. Feed is moving fairly well in small lots.

Brewing and Shipping..	Nominal
Choice Feed, per cttl.	\$1.15 @ 1.17½
Common Feed	1.10 @ 1.12½

OATS.

All descriptions are quiet, as for some time past, and prices show little strength. Holders are not forcing their stock on the market, however, and no quotable decline has occurred.

Red Feed	\$1.50 @ 1.60
Gray	Nominal
White	1.25 @ 1.30
Black Seed	Nominal

CORN.

Eastern grades show a little more firmness, but there is little movement. Some small yellow Manchurian corn is offered here around \$1.70, but receives little attention.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @ 1.82½
Eastern White	Nominal
Egyptian	1.75 @ 1.85
Milo Maize	1.75 @ 1.80

RYE.

There is little movement in this grain, ordinary offerings of which are quoted as before.

Rye, per cttl.	\$1.45 @ 1.50
----------------	---------------

BEANS.

The advance in prices continues, several descriptions being marked up again this week. Bayos, blackeyes, limas, and Mexican red beans show the greatest advance, and pinks and red kidneys are also somewhat higher, while other lines are very firm. The movement continues rather large, and this, combined with the very moderate supplies on hand, has placed the market in an exceptionally strong position. It is expected that the advancing prices will curtail the demand to some extent, but this effect has not been very apparent so far. There is some excitement among handlers of lima beans in the East, owing to the sharp advances and the close clean-up of stocks everywhere. It is said that there is practically nothing left, and foreign goods competing with limas are also exceptionally strong.

(On wharf.)

Bayos, per cttl.	\$6.20 @ 6.50
Blackeyes	5.50 @ 5.75
Cranberry Beans	4.50 @ 5.00
Horse Beans	1.90 @ 2.15
Small Whites	5.50 @ 5.75
Large Whites	3.75 @ 4.00
Limas	6.75 @ 7.00
Pea	4.00 @ 4.25
Pink	3.75 @ 4.15
Red Kidneys	6.00 @ 6.25
Mexican Red	5.75

SEEDS.

The demand has picked up a little in some lines, but is still mostly of a small jobbing nature, and values show no quotable change.

Alfalfa	12½ @ 15 c
Broomcorn seed, per ton.	Nominal
Brown Mustard, per lb.	3½ c
Canary	7 @ 7½ c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾ c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Local prices are firmly held at the old quotations. Owing to the advance in wheat, it is expected that Northern export prices will be advanced, although the export demand is very light.

Cal. Family Extras	\$5.80 @ 6.20
Bakers' Extras	4.80 @ 5.40
Superfine	3.90 @ 4.20

Hay and Feedstuffs.

HAY.

Shipments to this market have been only moderate for the last week, as the prices do not encourage large shipments. Business, however, is extremely dull, and it is impossible to clean up even the current offerings without occasional concessions in price. Weather conditions, which are now more than ever favorable for the coming crop, have tended to weaken the market still further, and consumers are buying as little as possible, while a good many holders are anxious to clean up. Dealers are taking little interest, preferring to wait until the new crop is ready. Offerings of alfalfa are heavy, and there is little demand, as green feed is abundant in most localities. It is reported that there is some hay, both grain and alfalfa, being shipped to Atlantic Coast points.

No. 1 Wheat, or Wheat and Oats	\$13.50 @ 14.50
do No. 2	11.00 @ 13.00
Lower grades	9.00 @ 11.00
Tame Oats	10.00 @ 13.00
Wild Oats	9.00 @ 11.50
Alfalfa	8.00 @ 11.00
Stock Hay	7.00 @ 9.00
Straw, per bale	65 @ 90c

FEEDSTUFFS.

Cocoanut meal is a little lower, other lines of feed being quoted as before. The general demand is a little better than it has been, but it is by no means active.

Alfalfa Meal, per ton	\$18.00 @ 19.00
Bran, per ton	25.50 @ 26.50
Oilcake Meal	34.00 @ 35.00
Cocoanut Cake or Meal	26.00 @ 27.00
Cracked Corn	41.00 @ 42.00
Middlings	33.00 @ 34.00
Rolled Barley	25.00 @ 26.00
Rolled Oats	29.50 @ 30.50
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

The market for garden truck is steadier this week than for some time past, the low prices prevailing last week having brought out a strong demand, which remains active in spite of a slight advance. The cooler weather has caused a material decrease in arrivals, especially of asparagus, which has been moving off readily at much better prices, though it will doubtless drop again before long. Peas also are higher, with the Telephone variety selling up to 6c, as the quality is improving, while offerings are still light. Celery is in light supply and considerably higher, and the better offerings of lettuce and rhubarb are bringing a slight advance. Mexican tomatoes have been marked up again.

Cabbage, per cttl.	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.	4 @ 9c
Carrots, per sack	35 @ 50c
Green Peas, lb.	3 @ 6c
Tomatoes, Mexican, box	2.00 @ 2.75
Sprouts, lb.	4 @ 6c
Celery, large, crate	2.00 @ 3.00
Rhubarb, box	75c @ 1.50
Lettuce, crate	1.00 @ 1.50
Mushrooms, lb.	5 @ 10c
Asparagus, box	1.25 @ 2.00

POTATOES, ONIONS, ETC.

The potato market is developing an easier feeling, with liberal offerings from various parts of the Northwest, and all old stock is lower, though new potatoes have advanced. The Portland market is weak. Onions are firmer, as the Oregon market is now cleaned up, and Australian stock is held at a sharp advance. Sweet potatoes are getting scarce, and are higher and a sharp advance has been made in desirable offerings of garlic.

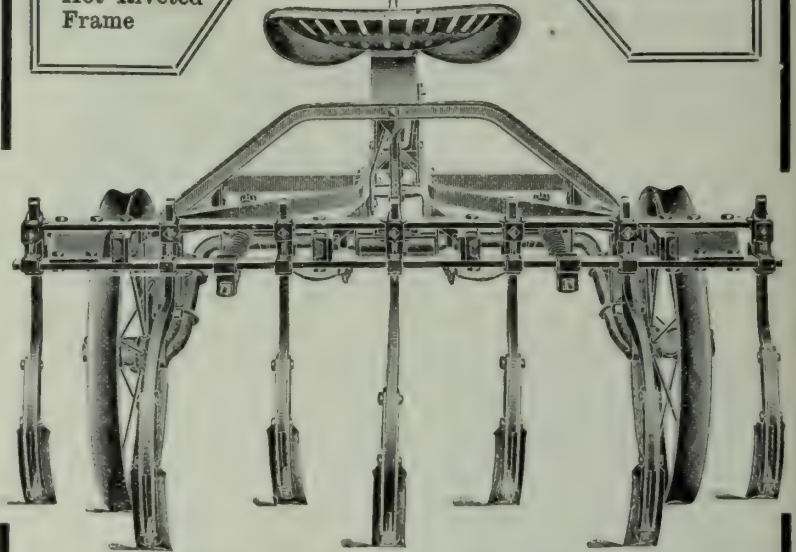
Potatoes:	
River Whites	75 @ 90c
Sweet Potatoes, per cttl.	2.00 @ 2.15
Oregon Burbanks	75c @ \$1.15

JOHN DEERE

New Orchard and Vineyard Cultivator

High Carbon Steel
Construction
Easy Hand and
Foot Lift
Hot Riveted
Frame

Even Penetration
in all Soils
No Neck Weight
Light Draft



John Deere New Orchard Cultivator—7 Shovels—50-inch Cut

Built Expressly for California Conditions

MADE IN THREE SIZES:

7 Shovels	50-inch Cut
9 Shovels	64-inch Cut
11 Shovels	80-inch Cut

EVERY Orchardist knows the advantage of even and thorough Cultivation. If you were buying a Cultivator would you select one with Rear Shovels that skim along the ground awhile before taking hold, and the Front Shovels cultivating more shallow than the Rear Shovels? Would you buy one with a weak unbalanced frame, hard lift, heavy draft, and flying up pole?

Before buying a Cultivator this year call on your nearest JOHN DEERE Agent who will be glad to show you the "Lightest Draft and Strongest Cultivator Made."

A Post Card will Bring Folder B-2, Beautifully Illustrated

John Deere Plow Company, San Francisco

Onions: Australian	4.75 @ 5.00
Bermuda, crate	2.00 @ 2.50
Garlic, per lb.	12 @ 15c
New Potatoes, lb.	3½ @ 5c

Dairy Produce.

POULTRY.

Supplies are very light, either of Eastern or local stock, and arrivals are kept pretty well cleaned up. Last week's prices are accordingly maintained without difficulty.

Large Broilers	25 @ 30 c
Small Broilers, per lb.	30 @ 35 c
Fryers, per lb.	24 @ 26 c
Hens, extra, per lb.	19 @ 20 c
Hens, large, per lb.	19 @ 20 c
Small Hens, per lb.	19 @ 20 c
Young Roosters, per lb.	20 @ 21 c
Squabs, per doz.	\$2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb.	20 @ 21 c
do dressed, choice	23 @ 25 c

BUTTER.

While supplies are keeping up well, there has lately been a little more demand, both locally and for other markets, and prices are on a slightly higher level than last week. The prices of 24c, however, which was set at the opening of the week on extras, could not be maintained.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras	22½ 23 22½ 24 23 23
Prime	
Firsts	22 22½ 22 23 22½ 22½
Firsts	22 22½ 22 22½ 22 22½

EGGS.

Another large lot of Chinese eggs has arrived, and while a good deal of this stock has been sold here in competition with Eastern, most of it is held in storage. What will be the ultimate effect on the market is still uncertain, but it is expected to hold down the lower grades, and perhaps even first-class stock, as local supplies begin to run short. There is already an unusually large supply in storage here. Prices for the week have shown very little change, demand and supply about balancing.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras	19½ 19½ 19½ 19½ 19½ 19½
Firsts	17½ 17½ 17½ 18 18 19
Selected	
Pullets	17½ 17½ 17½ 17½ 17½ 18

CHEESE.

Buyers are taking little interest, and as supplies are coming forward rapidly prices are lower on both Y. A.'s and Monterey cheese.

Fancy California Flats, per lb.	15½ c
New Young Americas, fancy	17 c
Monterey Cheese	13 @ 14 c

Deciduous Fruits.

Arrivals of strawberries are rather light at the moment, causing some improvement in prices, though the Southern stock has not been very attractive. A little Fresno stock has been offered, selling up to \$3 per crate. Apples are quiet but scarce, with little change in prices.

Strawberries:	
Southern, crate	\$1.25 @ 1.75

Longworths, drawer ... 75c@ 1.00
Apples: Newtown Pippins.\$ 1.50@ 2.00
Oregon Spitzenbergs .. 1.40@ 2.25
Oregon Ben Davis..... 1.65@ 1.85

Dried Fruits.

The advance in prices has caused a little hesitation in the trade in some quarters, but the spring consuming demand is coming out in very fair shape and in view of the general scarcity of supplies, values are well maintained. The interest of packers and dealers has been drawn to future apricots, in view of the sudden change in the crop outlook in the principal producing sections. Some packers had made prices in New York at about 11½¢ for extra choice, but these figures have been withdrawn. It is felt, however, that the naming of future prices at this time is little more than a gamble. Spot apricots are nearly out of the market, and peaches remain firm, with a moderate but steady demand from the interior. Prunes are in good demand, considering the limited supply remaining, and there is said to be some inquiry for export. Raisins are moving off steadily, with prices firmly held. The New York Journal of Commerce says: "The recent hot weather on the Coast, which has forced the fruit trees into abundant bloom one to two weeks ahead of the average season, has, according to telegrams received here, been followed by such a decided drop in the temperature as to cause fear of frost. Consequently packers who had been naming low quotations on early shipment apricots are withdrawing offerings, and others are advancing to 11c f.o.b. for equal quantities of choice, extra choice, and fancy in 25-pound boxes. The local trade does not seem to be much interested in the reports.

"Peaches are dull as usual in the spot market, but they, too, are affected by the possibility of frost at this time and the undertone of the market, based on the reports of cold weather on the Coast, is firm.

"Spot prunes are going steadily into consumption on small orders. In some quarters where holdings are understood to be small, a concessionary spirit is manifested, but the one or two holders who control the bulk of the spot supply decline to shade the prices they have been quoting for a week or two past. Speculative offerings of the 1914 crop for September and early October shipment from the Coast have been made with less confidence owing to the prospect up to the present of a record-breaking crop, but the adverse weather conditions on the Coast threatening curtailment of the output by frost have checked the disposition to make concessions.

"Spot raisins are moving slowly and no business in forward shipment from

When you buy "AMERICAN" Pipe
You also buy
"AMERICAN"
Service

**"American"
Service**

means expert advice, absolutely FREE, as to how your irrigation system should be laid out. It is based on knowledge acquired through the experience of many years. "AMERICAN" Surface Irrigation Pipe was the first pipe made with the double locked and soldered seam. It is the strongest on earth—more convenient to handle—and far superior in every way to any other irrigation pipe. You owe it to yourself to get the best. We have it. Write for catalog. Do it today before you forget.

American Steel Pipe & Tank Co.
354-56 Pacific Electric Bldg., Los Angeles
BRANCH—1228 "H" St., Fresno

SPRUCE BOXES LUMBER

FRUIT, CANNERY, BUTTER
AND ALL OTHER KINDS

PACIFIC BOX FACTORY

353 BEACH ST. SAN FRANCISCO, CALIF.
OPERATING OWN LOGGING CAMPS AND MILLS

the Coast is reported. The tone of the market, however, is firm, as there is little or no stock obtainable outside of Associated holders, and prices on these are firmly maintained."

Evap. Apples, 1913	8 @ 9 c
Apricots, 1913	13 @ 15 c
Figs: White	Nominal
Black	Nominal
Calimyrna	4½¢
Prunes, 4-size basis.....	7 @ 7½¢
Peaches	4 @ 4½¢
Pears	9 @ 12 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	5 @ 5½¢
Seedless Sultanans	4¼ @ 4½¢

Citrus Fruits.

Shipments from California continue very heavy, averaging nearly 300 cars per day, but as Florida oranges are nearly gone, there seems to be no trouble in the markets or their ability to handle the fruit. The prices on the Eastern auctions are about the same as last week. At New York last Monday, March 30th, the auction prices averaged from \$1.45 to \$2.35 per box for navels. On this day 48 cars were sold at auction, all from California. Bloods brought \$1.75 to \$2.20, and navelencias averaged \$1.85 to \$2.30 per box. Other auction points also showed heavy sales with prices about the same as New York.

Lemons are a little easier in price, owing to heavy receipts of foreign fruit. The price in California is now from \$2.80 to \$3.20 per box. On the Eastern auctions from \$2.60 to \$3.75 per box.

Shipments to March 30th, for the season, from California were 20,364 cars, as against 9,634 cars to the same date last year. Lemon shipments to same date this year were 898 cars, as against 1069 cars last year.

Oranges are again coming in freely to the San Francisco market, and the latest arrivals are said to be of rather poor quality, leading to an easier feeling in regard to prices. So far, however, no quotable change has been made. Grapefruit shows a further advance, while the top figure on lemons has been shaded, as there is practically nothing that can be sold at last week's quotation.

Oranges: Navels	\$ 1.00@ 2.25
Tangerines, crate	75c@ 1.25
Grapefruit, seedless	2.75@ 3.50
Lemons	1.75@ 3.75
Limes	5.50@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

A few almonds have come in lately, but California stock is very closely cleaned up, and as far as is known there is nothing offered in the country. Current trading is quiet. Reports on the condition of the coming almond crop are encouraging.

Almonds:	
Nonpareils	19 c
I X L	18½¢
Ne Plus Ultra	17½¢
Drakes	15½¢
Languedoc	15½¢
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½¢
Budded	19 c
No. 2	11½¢

HOPS.

Buyers have shown more interest in the last week than for some time previous, and efforts have been made to buy in a large amount of the remaining Sonoma stock at ½¢ advance over the former figures, but so far no business on this basis has been reported.

1913 crop	15 @ 17½¢
14 crop	14 @ 16 c

Live Stock.

The only quotable change is an advance on small dressed veal. Beef stock is receiving only moderate attention from local buyers, but with abundant feed, holders of both cattle and sheep are in no hurry to rush their stock to market.

steers: No. 1	7¼ @ 7¼¢
No. 2	7 @ 7¼¢
ows and Heifers: No. 1..	6¼ @ 6¼¢
No. 2	5¾ @ 6 c
ulls and Stags	2½ @ 5 c
(Grass-fed cattle, ¼ @ ½¢ less.)	
Calves: Light	8½ @ 9 c
Medium	8 @ 8½¢
Heavy	6½ @ 7½¢
Hogs: Grain-fed, heavy...	8 c
150 to 250 lbs.....	8¾ @ 9 c
100 to 150 lbs.....	8½ @ 8¾¢
Prime Wethers	5½ @ 5¾¢
Ewes	4½ @ 5 c
Yearling Lambs	6¼ @ 6¾¢
Milk Lambs	7 @ 7½¢

WOOL.

Sales of the San Joaquin and southern spring clips have recently been made at a range of 12 to 14c. The shearing in the northern part of the State is just well under way, and noth-

ing has been sold there except on the sheep's back, the prices in advance of shearing being at from 15 to 17c. Sales are reported at Tehama at 17½¢. The northern market is reported firm, with sales in the Yakima, Washington, district at 16 to 18c., and many northern growers are holding for an advance.

Spring Clips:
San Joaquin 12@14c
HORSES.

Prices for desirable stock have kept pretty well within the old range, although the general level for the last week was hardly up to that of the week previous, owing to a larger supply of stock which was not up to the desired standard. While some desirable stock of medium weight is coming in this week, it is possible that the offering of two lots of stage and livery horses will tend to depress the market.

Heavy drafters, 1700 lbs. and over	\$275@325
Light Drafters, 1500 to 1650.	225@250
Chunks, 1350 to 1500.....	200@225
Wagon Horses, 1250 to 1350..	150@200
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares.....	75@100

PUBLISHER'S DEPARTMENT.

We wish to make two corrections in advertisements recently appearing in the RURAL PRESS. In our last week's issue the advertisement of Roeding & Wood Nursery Company stated that the firm offered a 228-page book on citrus culture free. That would be a very generous offer. The company will send free its 28-page book on citrus culture. Send for it.

Another correction is in the location of the Norman B. Miller Co. In their ad. in our issue of March 21st the location of their place of business was given as being at 803 Market street, when it should be 503 Market street, San Francisco. Send for their catalogue.

TWO NEW BOOKS.

"The American Peach Orchard," by F. A. Waugh, 240 pages, well illustrated and bound in cloth; price \$1 net. The peach is a peculiarly American fruit, and the book gives especial attention to commercial orchard methods, from the propagation of the tree to the utilization of the fruit on the table. Anyone who wants to know the latest on peach culture must buy this book. Published by Orange Judd Co., 315 Fourth Avenue, New York.

"Management and Breeding of Horses," by W. M. Harper of Cornell University. This book contains about 500 pages, cloth bound, profusely illustrated, and sells for \$2 net. In the volume, on the management and breeding of horses, the entire subject of judging, feeding, breeding, care and management, as well as history and description of each of the breeds of horses, is presented in a most practical manner. The book is illustrated with 175 cuts of the best types of horses and the most approved methods of handling and training them. Published by the Orange Judd Co., New York.

A RELIABLE COMMISSION HOUSE
Send your Poultry, Eggs, Honey, Fruit, Dressed Veal, Pork, Lamb and other Farm Produce to
CHAMBERS, LEMOS & HANSCOM
430 Davis St., San Francisco.
References: Bank of Italy, San Francisco; Peoples Savings Bank, Sacramento; and Wells, Fargo & Co.

"SUPERIOR" ALFALFA SEED DRILLS

Saves 15 pounds of seed per acre. Wind or thrash cannot interfere with proper sowing of seed. Every furrow is properly made. Each feed sows an equal amount of seed. Seed planted an even depth and not at the mercy of birds or wind.

Send for illustrated catalogue.

THE H. C. SHAW COMPANY
Wholesale Distributors
56 N. California St.
Stockton, California

"Even sowing means even growing."

Hills Can't Stall It

Rough ground is no obstacle. Hard service is what it likes. The OilPull is easy to start and easy to operate at any kind of work. It is simple in design. Any intelligent person can run it after a little instruction.



15-30 horse power

with two speeds and close regulation, is adapted to all sorts of field work, from deep plowing to harvesting and drilling. Equally good for belt work with pumps, threshers, balers and other machines.

The OilPull keeps fuel costs down by burning cheap kerosene or stove-tops more efficiently than most tractors use gasoline. It carries enough fuel and water for a 20-mile trip with load. For bigger jobs we have the OilPull in 25-45 and 30-60 horse power sizes.

Back of every OilPull is the Rumely service, 49 branches, 11,000 dealers. Supplies and repairs at short notice.

Ask for OilPull catalog No. 353.

"There's only one OilPull—Rumely, LaPorte"

RUMELY LINES

Kerosene Tractors
Gasoline Tractors
Engine Plows

Threshing Machines
Corn Machines
Baling Presses

Cream Separators
Feed Mills
Stationary Engines

Road Machines
Grain Elevators
Steam Engines

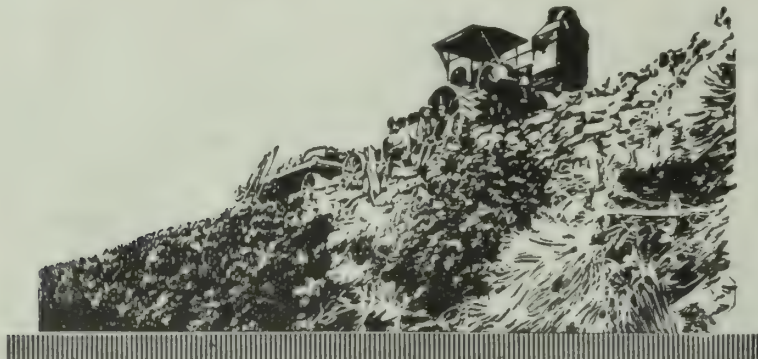
RUMELY PRODUCTS COMPANY

(Incorporated)

Chicago

Power-Farming Machinery

Illinois



A WONDERWAY THROUGH
PICTURELAND

WESTERN PACIFIC DENVER & RIO GRANDE

Unfolds to the Traveler a Magnificent Panorama of Snow-Capped Peak, Canyon, Gorge and Crag.

Marvelous Scenic Attractions Seen from the Car Window Without Extra Expense for Side Trips:

Grand Canyon of the Feather River
Pilot Mountain
Mirage Land
Glistening Beds of Salt
Great Salt Lake
Salt Lake City
Castle Gate
Glenwood Springs

Canyon of the Grand River
Eagle River Canyon
Tennessee Pass
Mount Massive
Collegiate Peaks
Grand Canyon of the Arkansas
Royal Gorge
Pikes Peak

CHOICE OF TWO ROUTES THROUGH THE ROCKY MOUNTAINS

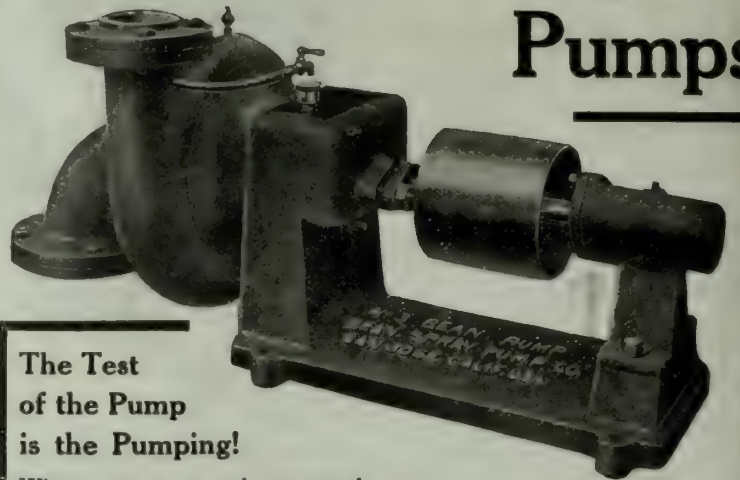
Through Standard and Tourist Sleeping Cars between San Francisco, Oakland, Sacramento and Salt Lake City, Denver, Kansas City, Omaha, St. Louis and Chicago.

Illustrative booklets descriptive of "The Scenic Route to the East" free on request.

E. L. LOMAX
Asst. Pass. Traffic Manager
San Francisco, Cal.

F. A. WADLEIGH
Passenger Traffic Manager
Denver, Colo.

"Bean" Centrifugal Pumps



The Test of the Pump is the Pumping!

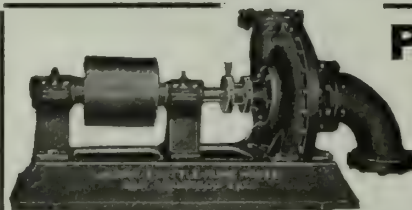
When you connect up the pump and turn on the power—that's when the real test comes! And that's when the owner of a Bean begins to realize that he has made the right selection. The Bean (known for many years as the Caton) is the most efficient and satisfactory centrifugal pump on the market. Among its many distinctive advantages is the **Bean Water-sealed Stuffing Box** which practically ends stuffing box troubles. It insures an absolutely air-tight seal. The Bean is automatically balanced regardless of water level; has ring oiling bearings; and suction and discharge can be turned to any desired angle.

Send for Catalogue 28-B; It illustrates and describes the entire Bean line of horizontal and vertical pumps and gives much helpful pumping information.

BEAN SPRAY PUMP COMPANY

711 West Julian Street

SAN JOSE, CALIFORNIA



National Centrifugal Pump



Red Cross
Wind Mill

For Every Service
and Use

Is the LARGEST in the Country

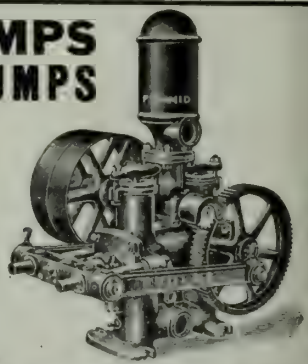
Gasoline Engines
All Sizes

Wind Mills, Tanks
Pipe, Pipe Fittings

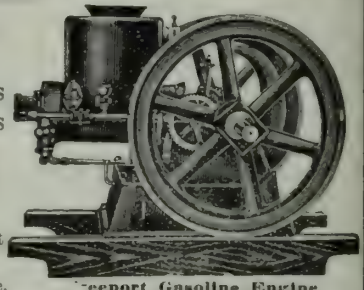
WOODIN & LITTLE
PUMP HOUSE

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Gould Trip & Pump Catalogue Mailed Free.



Pyramid Pump—Best of All



Report Gasoline Engine

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts.

San Francisco

One Man can run it.

BIG MONEY in the OFF SEASON

There's a big demand for Irrigation wells throughout California and the Southwest. You can Make Big Money during your spare time with the

IMPROVED POWERS COMBINED BORING AND DRILLING MACHINE

Bores a 100 foot well in 10 hours. Will go through gravel, sand or clay; drills through rock. One team takes it over any road. Operated by same team or by gas engine if preferred. No tower or derrick; rotates its own drill. FREE Catalog; Easy Terms.

Lisle Mfg. Co.
Dept. 3,
625 Third St.,
San Francisco Cal.

FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Farm Development, Hays.....	\$2.00
Manual of Laws.....	2.25
Farm Buildings.....	2.20
Breeding Farm Animals, Marshall.....	1.50
Hog Book, Dawson.....	1.50
The Dairy Farm, Gurlier.....	1.10
Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoesmith.....	.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees and California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
New Onion Culture, Greiner.....	.50
American Cattle Doctor, Dadd.....	1.00

Send remittances to

PACIFIC RURAL PRESS,
420 Market St., San Francisco.

THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 15.

SAN FRANCISCO, SATURDAY, APRIL 11, 1914.

Forty-Fourth Year.

Pure-Breds Make Boys Better Citizens.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Maintenance of pure-bred livestock often performs two good works. There are few instances where this is so well demonstrated as at the State School at Whittier, Los Angeles county. Their herds of pure-bred Holsteins and Berkshires not only add greatly to the school's revenue, but also go a long way toward making better citizens, which of course is the main function of the School.

Pure-Bred Stock at State School.—The breeding of registered Holstein cattle and Berkshire hogs is only a part of the farm work done at the Whittier State School, yet it has been found such a profitable part, both for money and morals, that it is now considered one of the big assets of the institution.

Started in 1907 with the importation of pure-bred cows from the east, the main thought was for the herd to produce enough clean milk and butter to supply the institution, and incidentally furnish a healthy occupation for a part of the large number of boy inmates. The hogs were considered in the same light, as large quantities of pork were used every year; and by having a good herd of hogs the skim milk and garbage could be profitably used. The undertaking is meeting surprisingly good results for, aside from the financial returns being satisfactory, the live stock is a big influence in making better men of the boys.

City Boys Make Good.—One would naturally suppose that boy labor, and especially the class of boys committed to such an institution, would be far from satisfactory, as data show that most of them are from the larger cities where little or no opportunity is offered them to learn of live stock, yet results at this place show that just the opposite is true for while most of them do not know stock, they are readily taking up the work and are far more enthusiastic workers than are commonly seen on dairies.

The work is divided among different groups of boys, one squad being allotted to the dairy work, another to the horses, and so on over the entire ranch. In this way a boy is allowed to do the kind of work that he prefers. An amusing thing about the dairy is that while each milker is allotted so much feed for his stock, the instructor has to take great care that only a certain amount is fed, for the boys are not slow to learn that good feeding makes a big production possible, and each one is trying all the time to beat his neighbor. As each milking is weighed and testing is done at regular intervals, a few months at

the dairy shows the boy the advantage of good dairy practices and we were told that many of the boys who have spent time in this branch of the work, have since become first-class dairymen, some for themselves and others in the employ of other dairymen.

Pure-Breds Generate Pride.—The success of the dairy and hogs is largely due to the keeping of the good stock, for anyone handling that kind of animals naturally feels himself a little superior to the ordinary person, and if there is anything that a boy likes to feel it is superiority. Although pure-bred hogs have been kept all of the time, it is only recently that Berkshires were selected as the principal breed, and from this time on it will be the object to increase both the



Pure-Bred Holsteins at Whittier State School.

quality and quantity of that department.

With the Holsteins it has been different, for since the founding of the dairy herd a great deal of progress has been made.

Great care was exercised in selecting the cows, with the result that at the present time the entire herd is of high quality. Many of the cows are in the advanced registry and while no official tests have been made it is known from the testing done at the school, that many of the cows are capable of making records which would be a credit to any herd.

That the reader may know the breeding of the herd we give the names of the following cows which were imported and most of which are still in the herd. They are: Princess Clothilde Pietertje 61744, De Kol Artis Clothilde 63941, Cassie Netherland Jewel 61050, Kind De Kol 4th, De Kol Pietertje Favorite Queen 2nd 89591, White Bess Clothilde De Vries 85947, Mutual Ormsby De Kol 75468, and Meg Rauble Hartog 72326. These cows were part of the carload.

The young stock, now on the place were sired largely by the bull Hartog Pontiac 48823, a son of the King of Pontiacs, which places the young stock high in the estimation of all breeders. At present, the

(Continued on Page 454)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to
PACIFIC RURAL PRESS CO., - PUBLISHERS

Advertising rates made known on application.
Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Apr. 7, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maxi-mum.	Mini-mum.
Eureka	.67	32.53	39.68	58	42
Red Bluff	.64	30.80	21 90	70	46
Sacramento..	.50	19.13	17.48	70	48
S. Francisco..	.47	28 42	20 00	70	50
San Jose	.36	18.70	15 02	74	44
Fresno	.44	10.65	8.40	80	44
Independ'ce	.00	11.44	8 31	74	30
San L. Obispo	.58	30.81	18 31	72	42
Los Angeles..	.15	22.79	14.27	72	52
San Diego	.12	8.98	9 00	68	50

The Week.

Since our last issue showers have fallen over wide regions of the State, herbage has acquired a lushness which is only attained in years of ample moisture and trees are all unfurling foliage banners of great breadth and depth of verdure. All the signs seem set for a year of great crops. Pasturage is beyond all the powers of the present animal population; a million more steers, if they could now drop from the sky, would bring more wealth to the State than a whole summer's run of immigrants through the Panama canal. Everywhere one sees hundreds of acres of rich forage and scarce a muzzle to crop it; dry ridges of the foothills are carpeted; banks of rivers or railroad cuts which last year were bleaching in the sun, are now clothed with grass and flowers. All such things are signs of fullness of returns from lands which are properly occupied and tilled.

Of course this abundant moisture and the cool moist vernal air which now prevails favor also things which are at enmity with the plant's service to the culturist. It is a great aphid year; plant lice crawling from the query-packages which come to our desk, give us a very animated appearance in the eyes of visitors. Whenever a subscriber writes of sending us "specimen of the pin-head bugs which are covering my garden plants," or "some kind of small, winged, gnat which is swarming on the new growth of my fruit trees"—the words would be enough, but the thing itself usually walks out of the unopened package and winks at us. It is almost a horticultural sin not to know plant lice and not to know that the whole army of species can be easily checked by the simplest insecticides: kerosene-emulsions, miscible oils, tobacco-extracts, or even common soap-suds, if sprayed with proper force

into the collective masses of them wherever they are seen. We are inclined to mention this thus prominently to impress the fact that every plant grower should know plant lice and be ready to fight them without waiting for advice, because so much depends upon getting the first shot at them. Some fungi are also favored by the conditions which multiply plant lice, and for them is Bordeaux, of course, fired at sight and without waiting for advice. These are the elementary things which all should know without asking, and we are glad such things are now being taught to the kids in the common schools. Some of these kids now know more than their grandfathers ever learned.

Constitutional Amendments.

It may seem at first thought a long leap from a plant louse to a constitutional amendment, but they really are not far apart, and they have, at least, this in common, that they both know how to get onto the farmer. Both would be easy to kill also, if the farmer knew enough to do the right thing at the right time, but he does not seem to get into the game just right and is usually left on the third base. Take, for instance, the constitution which is now being shot full of holes. It is still the "new constitution," though it is over thirty years old. It was a product of the Denis Kearney agitation which took away from the farmers of that day the best labor supply they had and gave them instead several Asiatic substitutes which have shown themselves to be inferior. The farmers were, however, fairly represented in the convention which made that constitution and many things important to agriculture were secured by it; some of them have since then been chopped out of it and others are under the axe this year. The taxation of mortgages on the mortgagee was lost by accepting the assurance that the interest rate would be exactly that much less, therefore the transaction would be simpler and the mortgagor would lose nothing. Such opportunity for observation as we have had indicates that the rate of interest-reduction has not been commensurate with the mortgagee's saving in taxes and that this amendment has netted the lender considerable gain. That is one of the amendments which have a disposition to cluster around the farmer's neck, like plant lice at the base of a rose-bud. But we are not trying to be a constitutional historian at this time, so we let it go at that.

The New System of Taxation.

Land-owners probably let go that matter of mortgage-taxation because the new system of taxation, to admit which the constitution was amended several years ago, promised to relieve the land from a part of the undue share of taxation which it had carried hitherto. This new system of taxation was claimed to be fairer to land-owners because it laid just burdens upon other forms of property and it was enacted because the farmers supported it. Barring minor defects, which we believe have been adjusted by later legislation, this new system of taxation has distributed the burdens of government more evenly upon various interests served by government, than such burdens were distributed before. It has in a general way operated as the land owners expected when they gave it their support. But now their apparently arises the danger of vitiating this

system of fair distribution of taxation among various forms of property, by "Assembly Constitutional Amendment No. 7—granting local option in exempting classes of property from taxation." On the face of it, of course, it will allow certain parts of the State, large or small, to set in operation definitions of property and imposition of taxes which are in opposition to the general system which now prevails and which was adopted by the people after the most prolonged period of scrutiny and discussion which the subject of taxation ever received in California. Obviously, such a radical reversal of the public will should not be allowed to ride into the constitution on the back of an amendment which has a face placid as that of a jackass at kicking time. Discussion of this amendment should prevail as widely in farmers' circles and organizations as discussion of the new system of taxation did several years ago; for, if that new system secured a fair distribution of taxation and gave the farmer nearer his true share in taxation than he ever had before, surely an amendment which threatens the very existence of that system should, on the face of it, be killed; or, at least, should not be allowed to prevail until careful scrutiny and discussion have revealed its character and bearings.

Proposed Do-as-You-Please Amendment.

This Assembly Amendment No. 7 originated in municipal sources and is ostensibly for the main purpose of serving city uses. If it ended there, our present occupation would be gone; the cities could fly away with it for all of our objection. But though it begins in the cities it affects the whole State. It is home-rule in taxation which does not stay at home. It is advocated by some because the same principle is said to be working well in some irrigation districts; that argument is of no agricultural value in favor of amendment of the constitution, for if it is there already, no amendment is necessary. Other arguments from an urban point of view, so far as we have seen them, are, from an agricultural point of view, irrelevant and immaterial—all save one, and that is the essence of the whole proceeding, to which all alleged benefits are put forth as blinds, viz.: that the direct aim of the movement is to realize the single tax—the tax on land and to exempt all other material property. There is no doubt about that because the advocates of the amendment admit it, and even make a virtue of it, with those to whom the single tax doctrine appeals. We have seen three arguments based on this admission, and we try to improve them a little, viz.:

"Simplicity and economy: a single subject of taxation is substituted for a large number"—that is, the farmer's money is easiest for the tax gatherer to get; therefore get it all from him.

"Certainty: the property is in sight of all and an assessment that departs from a fair value is easily detected"—therefore soak the farmer and if you make any mistake, raise the assessment and soak him some more.

"The value of land is, more than any other form of property, the creation of the community"—which is not true of farming land, except in limited degree; and yet soak the land just the same because it is easy to see and it cannot get away; and justify it in the public mind by the specious claim that the city makes the country, while the opposite is the truth.

The Farmer's Relation to the Amendment.

There are, of course, arguments against the amendment based upon the unequal burden it would impose upon various forms of urban property, but it is practically none of our business what they are. The bearing of the proposition as a whole, as affecting relations between city and country property, is in our field. The following reduced form of an argument against the amendment, prepared by a committee of a local club which gives much attention to economic affairs, may help our readers to understand its probable effects, if the amendment should be adopted:

"Taxation is not a proper subject for local regulation, in as much as so many citizens outside of a community are affected by its fiscal regulations, without having any voice in their adoption, and because one community cannot exempt certain classes of property from taxation without exercising a compelling force upon other communities similarly situated.

"Exemptions from taxation are bought at the expense of additional burdens upon the non-exempt, and, therefore, it is unjust because some evade some forms of taxation, to saddle all of the taxes now borne, at least in part, by this class of property, upon some other class. In other words, that land, which now bears its extra share of the burden caused by the evasion of taxation by certain classes of personal property, should not be compelled to bear all of the burden.

"Insistent pressure from within for exemptions by those who profit thereby, would soon bring us to the single tax on land values, which could not be shifted, but would be borne by the present owners; it would put an additional burden upon farmers, requiring them to pay part of the taxes of the cities; it would cause congestion in our cities; it would favor the large capitalists who could erect sky scrapers at the expense of the small owner and by the capitalization of the tax would at once shear part of the value from all land which could not now carry expensive improvements."

Why the Farmer Should Fight It.

The foregoing makes it tolerably clear, it seems to us, where this bug, if permitted to take wing, would finally alight; to wit, on the back of the farmer's neck—and it is a lot larger than a plant-louse, too. As a matter of fact, it is in opposition to the principle of equalizing the burdens of taxation, the securing of which in our fiscal system has cost many years of effort and which should not be sacrificed. In spite of the recent improvement in our system, the owner of country property is relatively very hard hit. His assessment is not based upon the producing value of his land, as it should be, but too often upon the valuations read into his land by frenzied promoters, who publish values to catch investors. The interests of city dealers in land are thus imposing taxation on country lands which is inequitable when their production is compared with the returns from city enterprises which this amendment aims to exempt. It strikes us that the proposition is one to which farmers should give careful heed and not, by neglect, give an opening for an effort which is hostile to an existing method which, as previously stated, was largely realized through the support of the farming interests of the State.

Sour-Sap Not a Good Circulating Medium.

We return to our starting point tinged with

the gore of financial discussion. Not alone plant lice and fungi are showing that the farmer often gets what he does not expect. How many assessments made on improved land on the basis of planting of fruit trees before March 1 are now unjust? It is simply one illustration of the way paper values fade in farming. Repeated appeal is being made to us for advice as to treatment of trees which made a fair break of leaves which are now shriveling. Quite large areas, chiefly of peach trees, planted on lands bought or selected in 1912 and 1913 as suitable for this fruit because the short rainfall did not reveal their danger, are now going back to the area of the unimproved. There is no help for a tree badly stricken by standing water in the soil, which may not have appeared as a surface overflow at all. If not hit too hard, there may be recovery after cutting back, with sometimes a little water if the dry March took too much moisture from the surface soil. The tree has in fact to restore its absorbing system; to reproduce the delicate extensions which the standing water caused to decay or prevented the newly-planted tree from securing. This cannot be secured by medication, and there is, therefore, nothing which could be called a remedy. Land should not be planted to fruit, if it holds water like a tub, until proper drainage is artificially secured. Some trees which may be hardy against standing water for a time if duly established, cannot start in water immediately after planting. Probably not all trees hit in this way this winter are yet showing it. Sometimes the collapse of the tree is considerably delayed. There should be a constitutional amendment against it—that is, in the constitution of the tree.

Queries and Replies.

Querists must submit full names and addresses.

Transplanting Date Palms.

To the Editor: I would like your opinion as to whether date palms can be successfully transplanted? I have been told by nurserymen that they will not live unless they are transplanted from pots without disturbing the roots.—Subscriber, Lodi.

Palm roots should not be cleared of the soil enclosing them, but they are really very easy to move, because they have rope-like roots which hold a ball of earth together. It is not likely to break and fall apart as in the case of moving other trees. Trench around the plant with a sharp spade so that the inside of the trench shall be a foot or more (according to size of plant) from the base of the palm. Go down a foot or two feet (according to size of plant, again) and then cut under with the spade, until the plant stands in a loose ball of earth. Lift out, with tackle if necessary; settle the earth in the new place with water and keep moist. Remove a good part of the leaves before moving. We would rather bet on success in moving a large palm than any other large tree we know.

Nevada for Beans.

To the Editor: I am going to try to raise some California field beans. I call it California because Nevada was never known to grow field beans. I want to try the bayos. Would like to know the amount of seed to plant, and how far apart in rows.—F. C. B., Lovelock, Nev.

If Nevada is so shy on beans as that you had

better begin carefully. A small patch will teach you as much as a large one and a failure will cost less. The pink bean is better than the bayo for difficult conditions. Plant in rows about 2½ ft. apart, dropping the beans about 4 inches apart and cover from one to two inches, according to surface moisture. Of course you will wait until you are out of the frost.

Cutting Back at Planting.

To the Editor: I have been taking great interest in different ways of planting and trimming young trees. Would you kindly give me your advice. How deep would you plant the tree when setting it out? Would there be any harm done to the tree by planting the bud beneath the surface; if so, in what way? Some people cut their trees after planting to 18 to 20 inches above the ground. After the tree sprouts it leaves a short dead stump in the center between limbs. Other people cut trees ready to plant the first year, leaving two or three short limbs about 2 or 3 inches long which would start the tree for a perfect shape. This does away with the dead stump between limbs, leaving them about the same height from the ground as the first method. With a dead stump between limbs would the tree be more liable to get diseased.—E. F. M., Germantown.

Do not put the bud-scar below the ground except in a very light sandy loam; usually it should be put on the north side and above the surface. When the new branch starts below the top of the cut-back stem, the stub should be cut back to near the starting place of this top branch, so the wound will quickly grow over. You can leave short pieces of the laterals in planting (say to the first bud) when planting conditions are good and the trees likely to make a quick start. If conditions are not so favorable it is usually better to cut back near to the stem, but not so close as to injure the dormant buds at the base of the lateral. If more than one of these dormant buds start, pinch off all but the best one. Always cut back dead stubs to live bark below so they can grow over quickly; they are likely to favor interior decay of the branch or stem.

Self-Help in Farming.

To the Editor: I have purchased 20 acres south of Yuba City which I expect to plant to canning peaches eventually. The soil is a deep silt loam, well drained and ditched. About 14 acres is in growing alfalfa about two years old; balance is checked up, but nothing has been planted. I wish to set out next spring about 10 acres of Phillips or Tuscan. What would you advise doing with the bare land in the meantime? Would you plow up four acres of the alfalfa this fall to make the ten acres peaches? I wish to keep the other ten acres in alfalfa until the peaches commence to bear. Is there any other fruit that I could interplant with this alfalfa successfully?—F. C., Piedmont.

We are sorry to betray your confidence, but we do not undertake to advise any reader as to what he should grow. He must do some of his farming himself, and we therefore insist that he shall make his own choice of crops. Whether you should have six or ten acres of peaches, you must decide for yourself. On your checked-up bare land you can make your choice of all the summer crops which do well in your vicinity: corn, sorghum, beans—or stock squashes if you have a dairy or pig man near by who will buy them. Any fruit will stand growing alfalfa as well as peaches will—but of course you do not want alfalfa stubble for ripe prunes to drop on.

Persimmons Pay and are Easy to Grow.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

One of the first things noticed on arrival in California from the East about Thanksgiving was a tree full of ripe tomatoes, but it had no leaves. When I admired the tomato tree, some one told me they were Japanese persimmons. My pride was later soothed by seeing a strawberry tree full of "strawberries" near Luther Burbank's place in Santa Rosa, so perhaps a tomato tree is not yet beyond California's possibilities.

But it was January before I tasted the delicious persimmons. H. A. Bassford at Vacaville pulled out one that had been left over from his shipments and I ate part of it. A great deal didn't get inside my face, but there was enough so I knew it tasted very "moresome."

In July I visited Ed Trapp of Los Angeles county and saw beside his house a persimmon orchard adorned with large glossy leaves that made it look a bit like a subtropical park. They were eight years old, from the graft. Mr. Trapp had bought them from Japan, thinking he was getting one variety, but he got ten. Nevertheless under his system of selling the fruits in lugboxes on the Los Angeles markets along with his other fruit and vegetables, the variety does not worry him—his persimmons string out from early till late and supply the demand without overloading. Mr. Trapp says it would pay him better to wrap and pack and ship the fruit but "I don't get sleep enough as it is." Anyhow the early fruit brings 8 to 15 cents per pound, running down to 4 cents later, but \$5 to \$15 a tree is not so bad anyhow, for while the wood is brittle, it holds 100 pounds of fruit easily per tree.

For the cultivation and irrigation are like that given to peaches, pruning is the simple matter of shortening new growth on outside limbs to 1½ feet, there is no spraying and no pests—even the birds do not peck them after the leaves are gone. And while they may be harvested in November, no particular care being taken in the handling on account of nearness to market, they may be left on the trees two months after the leaves fall. The frosts only sweeten them till they are like candy. In November they are still hard, needing to ripen in a cool place. None are puckery when ripe, and the Black Heart variety is eaten like an apple.

Mr. Trapp did his share of boosting for Los Angeles county one winter merely by leaving the fruit on the trees until January, a glorious sight that attracted attention from all auto-tourists on that main road.

But it remained to find the real commercial persimmons at the end of a winding mile of steep down grade at a jumping-off place into the feathery waters of American River Canyon. There, protected on all sides by magnificent hills, Ira Avery's father-in-law

planted Japanese persimmon trees in 1876 and three of them are still thrifty and bearing. It was in '87 that Mr. Avery bought the ranch and planted 50 more. As he says, persimmons are hard to start, grafts not uniting well on the stock and for a while it looked as if they would die out, especially because their roots were black. Statement of this fact to the nurseryman in Japan where the trees were bought and where he still gets all he plants, brought other trees to replace the unthrifty ones. But they most all lived, and soon he had over 100 trees. In the years since then, many persimmons have been planted in whatever nooks of the ranch were available until he now has 1500 trees ranging from one to 38 years old. Some have been raised from seed, but they do not reproduce truly, and the difficulty of making grafts live has always kept his source of supply in Japan, though he says some people get them from Florida grafted on our native wild persimmon stock.

Four hundred were planted last spring, and one of these bore fruit the same season. The first four or five years, however, all fruit should be picked off while small to permit the laying of a good foundation for a strong healthy heavy bearer. It is during this time, too, that all the pruning is done, just to shape the tree.

Irrigation and fertilization are the same as for other fruit trees, there are no pests to require spraying. All the barnyard manure he can get is applied, with some commercial fertilizer.

The time has come, however, when Mr. Avery is unable to care for the place, though he still lives above the soft roar of the river and still looks out at the massive but kindly hills that greeted him so many years ago.

To keep the ranch in shape, he has rented to the much trusted Japanese. Y. Kawamoto, who picks, packs, and sells the fruit under a label of beautiful design showing color pictures of three important varieties and the name of their shipping company in one corner, and "Grown by Y. Kawamoto, Avery Orchard" in the other. Picking begins the middle of September and lasts till December. The fruit is then unripe, hard as a green tomato, colored, but not the same as they become later. They are wrapped in papers like peaches, packed regularly in peach boxes, the largest size being highest priced. Some have packed 40 per box and brought \$5.

The Tane Nashi variety pays best on account of its size and earliness. Seven main varieties are grown and shipped. The others are similar enough to go under their names. These seven varieties are in about the order of their importance, Tane Nashi, Hachiyu, Hyakume, (the most important) Maru Kaki, Mikado, and Edoishi.

Some trees yield over 30 boxes, many are not yet in bearing; the crop two years ago was 2200 boxes, last year 1500, because the trees bear lighter in alternate years.

New York is the best market, Pittsburgh, Philadelphia and Boston being good while the demand is light in the Middle West. Many are sold in San Francisco, where the average net last year was \$1.08½ per box while the net on eastern shipments was \$1.35. The fruit is too hard to eat even after shipment to New York where it must be stored sometime until well ripened.

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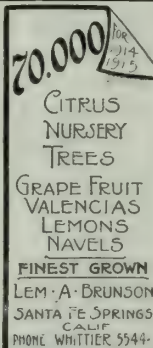
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The Golden Prune.

To the Editor: I notice an inquiry in your March 28 issue concerning the Golden prune. I can give you the history of the Golden prune, as I believe I am the only one who planted it in California. It was propagated by Seth Luelling, of Milwaukie, Oregon, who introduced the Black Republican or Luelling cherry: also the Bing cherry—the last so named after a Chinese laborer who was employed by him for over 20 years in his nursery.

I started a branch nursery at Pleasanton, and Mr. Luelling, who was my father-in-law, sent to me from Oregon, among other trees, the "Golden prune" and the "Golden Branch" prune. I planted both in my Pleasanton orchard and I planted the Golden prune in Sycamore valley, 3 miles southeast of Danville, in the Oakdale orchard, which I owned, and also in the Bellevue orchard in the same valley. I did not propagate the Golden Branch prune, as I thought it a little too tart.

I do not know any fruit-bearing tree more prolific than the Golden prune. The fruit is nearly the color of the Silver prune or Coe's Golden Drop—which we considered the same—but a little smaller. I have had seven-year-old trees average 400 pounds to the tree in a five-acre block in the Pleasanton orchard. The Golden requires severe pruning because the wood is a little brash. I have made beautiful-appearing fruit by sulphuring, and just tart enough to be very palatable. Canners like them also.

Redwood City. J. D. SMITH.

[We are glad to have these recollections from Mr. Smith, with whom

we have had a satisfactory acquaintance for the past 40 years—nearly. We are glad to have the points because they support what we said of it from our own recollection and the statement of Leonard Coates, who told in our issue of March 21 how he had grown the variety in the early nineties in Napa valley. This statement evidently did not catch Mr. Smith's attention. The Golden now seems to be pretty well chased down, both historically and culturally, for all the statements practically agree.—EDITOR.]

CRUDE OIL AND BARK INJURIES.

To the Editor: A couple of weeks ago we discovered that climbing cutworms were eating our fruit buds at night. People said they never heard of such a thing before—not for twenty years, they said. Nobody knew what to do, and I bought crude oil and painted on the trees below the fork. The oil prevented the cutworms from climbing the trees, but the oil seems to have injured the trees. I have made cuts with my knife on the south side of trees and find the oil has penetrated the bark. The bark seems dry as if the sap has stopped running. Has the oil injured my peach trees or not? The afternoon temperatures have been between 80 and 90 degrees the last few days.—SUBSCRIBER, Kingsburg.

[Heavy oils are always dangerous if applied directly to tree bark. Whether it acted through sun-burning and not otherwise, you can tell by cutting into the bark on the north side of the tree. If the inner bark is healthy in the shade, the presumption is that the injury is sunburn, and it may have been done before you put the oil on (in fact, last fall, perhaps), though it is quite likely that the oil by darkening the bark, and otherwise perhaps, increased the injury. The best thing you do now is to cover the oil with a coat of whitewash and see later how badly you are hit. The way to get cutworms is not by oiling the bark, but by using the poisoned bran remedy.—EDITOR.]

BUD TO SEEDLESS GRAPEFRUIT.

[Written for the PACIFIC RURAL PRESS.]

Wilted grapefruit from Butte county was begging on San Francisco markets March 26 for an offer of 75c per box. It is seedy and had been poorly packed. The combination prevented its sale until it was scarcely salable, though prime seedling stuff was selling at \$1.50 to \$1.75, and prime seedless grapefruit at \$3 net to the grower. This in spite of the fact that the dealer personally prefers the flavor of the seedy kind. But he said if he had an orchard of that kind he would bud it over gradually to the seedless, which will grow wherever the cheaper kinds will. A few trees at a time might be budded over, or part of each tree each year, so a good crop would come while the new variety is growing.

The San Francisco market has been overdone on grapefruit, but, says Mr. Gould of the Growers' Co-operative Agency, consumption in the East is steadily on the increase, especially in the Southeast, which is now largely

supplied from Florida. It is suggested that its medicinal qualities; especially perhaps in combating malaria,

are likely to increase the demand, especially when grapefruit is advertised like our oranges now are.

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Insurance the Recourse Against Accident Compensation.

To the Editor: Please answer the following through the PACIFIC RURAL PRESS. Will not the compensation act work a great hardship on the small farmer?

I notice that Mr. Pillsbury says the State, for its own protection, says to every form of industry, except agriculture, that each such industry must take care of its own killed and wounded workers. But it seems it does not exempt agriculture entirely. There seems to be lots of work to be done on the farm that would come under the compensation act, and when a farmer who has a small farm, from which he can just make a comfortable living for himself and family, has the misfortune to have one of his employees crippled, perhaps for life, who is he going to support—the employee or his family? He cannot do both. The law says he must pay his employee, without consideration as to whether he is able or not.

Mr. Pillsbury says that he who has contributed a hand or an arm or a leg or an eye or life to an industry is as much entitled to be compensated for that contribution as though he had contributed labor, or capital, or raw material, or anything else which enters into the product. Is not the farmer who perhaps has contributed his lifetime to raise food to help feed the nation entitled to some consideration?

And then, if the farmer has taken the precaution to take out insurance, is the employee bound to accept such insurance, and will the insurance company defend all suits, and pay all bills, and all damage that the employee might gain? If not, the farmer is liable even after taking out insurance.—A SUBSCRIBER, Oroville.

COMMENTS BY MR. PILLSBURY.

With reference to the foregoing letter of "A Subscriber," I beg to say:

1. That if one of his employees should be injured, through his negligence or that of any member of his family or any other person in his employment, the injured person would have a right to sue him for damages, and if the jury believed that there was negligence, damages would be assessed against him without regard to whether or not he had only his little farm upon which to support the family, and this has been the law in this country for three-quarters of a century, except that certain old common-law defenses, which were never defensible, have been taken away, making it much easier to secure damages than formerly.

2. Likewise, if "A Subscriber" should file an acceptance of the Compensation Provisions of the Workmen's Compensation, Insurance and Safety Act, as he may do at any time by writing to the Industrial Accident Commission, 525 Market street, stating that he wishes to do business under that act instead of under the law of liability in damages, if one of his employees should be hurt he would be called upon to pay without regard to what effect it would have upon his own fortune or that of his family.

3. But, if he is a prudent man, a man who keeps his home insured and his barn insured against fire, he will in either event wish to carry insurance against either the hazard of suit for damages or liability for compen-

sation, and, in either case, the insurance will cost him just the same; that is, \$1.50 on each hundred dollars of payroll for a year. He may use this all in three months, or in one month, or in twelve months, as suits the requirements of his business. If he takes out liability insurance he must help his insurance company to fight any claim made by the injured person unless the insurance company can settle the claim for less than it will cost him to fight it. That is, he will then be insured against liability for lawsuits, but his help will not be insured against liability for accidents.

On the contrary, if he comes under the compensation provisions of the Act and takes out compensation insurance, also at \$1.50 on each hundred dollars of payroll, he will not only be insured against liability for claims for compensation, but his injured employees will be insured against accident and he may help them to get their insurance instead of fighting them to prevent their getting it.

If he takes out compensation insurance and pays for his policy, and a claim is made against him on account of an injury which the insurance company wishes to resist, all "A Subscriber" has to do is to set up the fact that he holds such policy and the insurance company will be substituted as party defendant and the proceeding will be dismissed as to him, without any "come back" in any event, even if the insurance company goes broke. His credit and his estate are relieved.

Now, your correspondent might have reason to complain of the State for putting this burden upon him if it opened no way for him to insure at what it is worth to do the insuring; but the State has opened just such a way, through the establishment of the State Compensation Insurance Fund, and he will be just as blameworthy if he does not take out this insurance as he would in the event of the burning of his home if he did not carry fire insurance upon his home. The man whose home burns and is uninsured has small claim upon public sympathy for his misfortune. He has only himself to blame for the greater part of that loss, because fire insurance is thoroughly and easily accessible at reasonable rates. So it is with compensation insurance. It will cost the average farmer of the State only \$13.42 per year to insure himself against all loss through industrial accident, and, if he wishes, he may add his own wage value and that of working members of his family to his payroll, paying the premium on the whole amount, and himself and his family be insured against the consequences of accident just as much as the hired help, and prudent farmers who work with their men will soon come to carry this insurance just as certainly as men generally carry accident insurance or life insurance or fire insurance. In fact, insurance is the solution of this whole problem, for that is what compensation is. It is insurance. It makes the employer the limited insurer of his men, and he may carry that insurance himself if he is big enough and rich enough, but if he is not he will do well to hire someone to carry it for him, and there is no end of opportunities to

TREES

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We have a magnificent stock of all the leading varieties. If you want to plant just a few of these fine trees to ornament your home grounds, or whether you purpose planting on a large scale, it will be to your advantage to get our quotations before placing your order.

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We have just issued a special Bulletin on the olive, giving valuable information on planting, pruning, cultivating, harvesting and packing. It will be mailed free on application. We have a fine stock of MISSION and MANZANILLOS in surplus and will name you attractive prices. Let us figure on your orders.

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If you have not already arranged to plant citrus trees this season and are in a position to do so, we can offer you the finest stock grown on the Pacific Coast. We have a complete assortment of all the leading varieties of oranges, lemons and pomelos and will be glad to have the opportunity of figuring with you. Write us today.

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Teague trees are started
right, grown right,
and shipped right.

secure that insurance at fairly reasonable rates, although I am personally of the opinion that the rates are all too high and will be reduced as time passes and experience can be had for determining rates. Meantime, the State Fund will keep a correct account of what insurance does cost, and will return the excess over what it cost to all those who take out policies with the State Insurance Fund.

I think that the safe and sane thing for your correspondent to do is to accept the compensation provisions of the Boynton act for his farm, insure with the State Compensation Insurance Fund, and thereafter rest in security and confidence that he himself cannot be hurt.

Leasing Owners Not Liable.

To the Editor: I enclose a letter to Mr. A. J. Pillsbury and will ask you to forward same to him and ask him to send his reply to your office. I do this because I believe you will find his answer sufficiently interesting to warrant being printed in your paper.

A owns an orchard. He enters into an agreement or contract with B in which B agrees to do all the necessary cultivating in the orchard, gather the crop, and haul same to the packing-house; and in consideration for said work, A agrees to give B one-third either of the crop or of the net proceeds from the sale of the crop. B, being responsible for the picking of the crop, hires pickers, also pays pickers when the job is finished. While gathering fruit, one of these pickers falls either off the ladder or out of a tree and sustains considerable injury. Can A be held responsible for the damages so sustained? B, while engaged in cultivating, is kicked by one of his horses, or sustains any one of the injuries which may possibly happen to a farm hand. Can A be held responsible for such damages? In other words, if a farmer gets his work done on what is sometimes known as a lay—which is a species of rental rather than by hiring and paying wages—is he just as liable for damages sustained by those who do the work as he would be if they were hands hired in the ordinary way?—W. E. L., Santa Barbara.

COMMENTS BY MR. PILLSBURY.

With reference to the foregoing hypothetical case, I beg to say that there would be no contract of hire between A and B, and therefore A would not be responsible in the case that B were injured where working upon leased premises. B, in such a case, would be an independent employer and A would be no more obligated to him than he would be if B were a tenant of A's house.

Inasmuch as B will be an independent employer and not performing constructive work on premises over which A would have immediate control, A would not be a principal and would not be responsible as principal in the case that any of B's employees got injured. A lessee of a ranch or other property is in the position of owner, is in possession, and his obligations are those of owner. A is merely an investor, and the Compensation and Insurance and Safety Act does not, apply to investors as such.

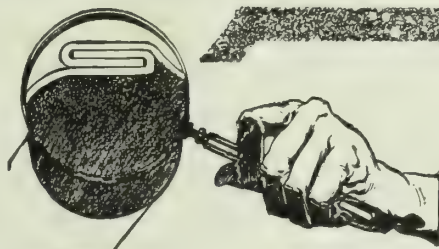
A. J. PILLSBURY.

Oakland is taking active steps for representation at several Eastern land shows this fall.

Lowest Prices on All Sizes Duck Irrigation Hose Canvas Wagon Covers Tents Grain Bags and Twine

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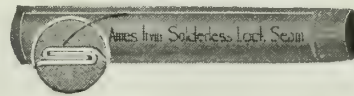
Ames Irvin Lock Seam Irrigation Pipe won first prizes against all competitors at the Sacramento State Fair in 1913 and at Fresno and San Jose County Fairs in 1912 because

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- is made without solder or rivets. Only the sheet of steel itself is used.
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TOO GREAT HASTE.

To the "Subscriber" who has been trying to breed yearling cattle and

pigs, we have only to say that we do not wonder you failed to sign your name. Do not be in such a hurry with your stock, or with your letters.

Marketing Cauliflower.

[Written for the PACIFIC RURAL PRESS.]

The season for southern cauliflower on the San Francisco market was over six weeks ago but the northern gardeners are still selling and shipping. The hot weather of last week sunburned and yellowed many of the heads, rendering them unfit to ship because eastern buyers won't have it. Yellowed heads are likely to be bitter and tough and they do not keep so long as the white ones.

A grower on the Colombo market in San Francisco had sold all the acceptable heads to a shipping firm and was grading them on the occasion of a recent visit to the market by the writer.

With a long knife, he would chop off the leaf ends within about two inches of the head. If he couldn't see the head then without pulling the leaves away "it's a safe bet that it is white and solid" for the incurving leaves have protected it from the sun. If it were too old it would have spread out and opened the leaves apart.

But alas, a large percentage could be seen and then a quick look decided whether the head would go into the pile to be sold at about 25 cents per dozen to peddlers for immediate consumption in the city, or whether he would toss it to the representative of the shipping company who was packing the acceptable cauliflower in "pony" crates. Many heads were soft, would spread apart on pressure with the fingers, many were yellowed, many were covered with dust blown probably from the road. These could not be shipped.

All of the heads were small, a condition quite general, so that about eighteen heads were packed in the crates which are built for a dozen and

are billed to the East as dozen crates. The grower receives 40 to 70 cents per "dozen", larger heads bringing the better prices.

Here is a great opportunity for seed growers to improve the profits from the vegetable; that is, save seed from only those plants whose leaves closely wrap the head until it is too old to eat. Plant breeding by such selection would in a few years produce a variety that would not subject its grower to the losses from sun browning recently experienced.

CITRUS DROPS.

Though loquats are poor shippers, a few baskets from Orange county on the San Francisco market recently were in first class condition.

Navelencia oranges are growing in favor. A considerable shipment to San Francisco from Orange county led the dealer to compare their fine thin smooth skins with those of the Washington havel, remarking that they bring a better price because of their fine appearance.

A citrus authority recently advised planting the Marsh Seedless grapefruit as the best known, though its flavor might be improved.

The Florida state chemist keeps close watch on orange shipments to prevent marketing green ones. If any have more than the standard acid content, the attempting shipper is fined.

Deep sandy soil grows large sized navels; clay soil makes them smaller other conditions being the same, according to Prof. J. E. Coit.

The California Fruit Growers' Exchange keeps an agent in London all the time to handle their shipments to that country and Europe, and to develop new markets in competition with European oranges. Shipments to Hawaii and Australia are handled from the San Francisco office.

San Francisco receives and consumes or reships 800 to 1000 cars of oranges per year.

Twenty years ago, California citrus shipments were about 7500 cars. Ten years ago they were about 31,500 cars, last season produced 18,000 cars in spite of the freeze and this season will be not far from 45,000 cars.

SOUR STOCK UNIVERSAL.

Nurseries of California last year used between 500 and 600 bushels of sour orange seed from Florida, at \$30 to \$50 per bushel. Since each bushel contains about 30,000 seed, there are many new orange trees in the State. Sour seed comprised 85% of all used in two large representative nurseries; sweet, 9%; pomelo, 5%; and all others, 1 per cent.

The San Dimas nursery, according to J. G. Cockroft, planted last season 20 bushels of Florida sour seed, 1 of California sweet, and 1 of Cuban pomelo.

The sour stock is good on all soils, the sweet on some; sweet seed is hard to keep because it must not become even partly dry, and for this reason when sweet seed are wanted, a man is often sent direct to a pile of cull

oranges to get them fresh. They produce trees which are quite subject to gumming both in nursery and in orchard.

Sour seed keep well in any moist

place, being taken from fruit in the fall and kept till next spring.

Sour stock is as good as sweet anywhere and much better in most places. It is used almost entirely in Europe.

(get profit and pleasure from that back yard)



The hours you spend with hoe and rake will never be wasted. You will experience new bodily vigor, the joy of being a producer, and pleasure in the delightful freshness of your contribution to the larder.

Germain's Garden Collections

The prices on these collections are much lower than the regular list would total on account of our being unable to pack during the dull seasons. The selections are by our experts, and the quality of the seeds the very best. Planting directions are on each packet.

Small Vegetable Garden—50 cts. Prepaid

Contains 15 packets, worth over 75 cts.

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Don't fail to write for my new free
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tells when and how to plant all kinds
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If you want the best Orange Trees

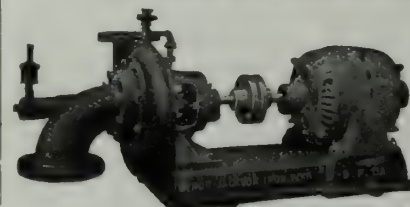
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those features of design and con-
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We build Jackson Centrifugal Pumps
in every capacity for every service
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Jackson "1912" Direct Connected Pump.
BYRON JACKSON IRON WORKS
LOS ANGELES, 212 N. Los Angeles St.

357-361 Market St.,
San Francisco, Cal.
WORKS, West Berkeley, Cal.

Less Handling, Better Currants.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

It paid Jack Smyth of Alameda county last year to break away from the custom of his section in shipping currants to the market in bulk. Last season his 40-acre crop went in berry chests to San Francisco and local buyers and in the four-basket 30-pound plum crates to southern California. Another Alameda county grower, who has three times the acreage, shipped in bulk as usual to Los Angeles and a large part of his currants went to the jelly factory.

Smyth's currants were sold f.o.b. Haywards at \$1.10 per crate, which holds 16 or 18 pounds net, for more than 4000 crates shipped south, and the total gross returns last year from his five-year vines bearing their third crop, was \$9640 and would have been a third more but for a frost early in May. H. P. Garin of San Francisco who bought the crop has bought it again, for the coming season, and will furnish the crates and chests as before. They enable the housewife to buy enough for home use without having them handled and bruised several times. One time only are Smyth's currants touched by human hands before they reach the consumer—that is when they are picked.

Hot weather or frost are dangerous to the fruit though the leaves are quite resistant. Too much sun turns the berries to a cooked grayish color, and for this reason, there seems to be only a limited part of Alameda county in which they are profitable. So near as Niles is dangerously hot. Currant worms are practically unknown and there are no other troubles except occasional borers in old canes.

The currants bloom late in April, at which time they are sulfured to prevent mildew. The crop, borne mostly on the old wood and the lower half of the new wood, is picked all through June.

In setting out new plantings, Mr. Smyth plows ground deeply in spring, where no currants have been for two or three years, so pests will have died and the ground will have been somewhat renewed. Then he sets cuttings or slips 14 inches long so that three or four buds are above ground a couple of feet apart in rows 4 to 4½ feet apart. Aside from cutting back to three feet tall, no pruning is necessary till they are five years old. With good care in cutting out old weakened sticks, after the crop is off, not allowing them to get too thick, cutting back half of the new growth, and with good cultivation, the bushes will live productively till ten years old, when they should be plowed out and the land used for something else. No irrigation is necessary.

HARLEQUIN CABBAGE-BUGS ON TURNIPS.

To the Editor: Will you tell me a remedy for the bugs inclosed. They are thick on my turnip tops; they do not eat the leaves, but suck the sap out and the leaves dry up. They work on the top leaf first and don't stop until they get all of them.—J. M., Chico.

[The insects are "harlequin cabbage bugs"—very large and gay-colored sucking insects. They cannot be poisoned and are very hard to kill by any spray. They can be hand-picked from the plants, or trapped under pieces of board, etc., among the plants

where they will go to hide and where they may be collected for destruction early in the mornings. Young plants may be protected by covering until large enough to make a fight for themselves. If the rubbish is collected and burned in the fall, you may get most of the eggs, etc. The bugs do not get along well if the ground is kept clean.—EDITOR.]

ROOT KNOT ON BERRIES.

To the Editor: I have a patch of blackberries and loganberries. They have not done well the last two years. I examined the roots this year and found they had big knots. I dug them all up and cut all the knots off. What should I have done?—C. F. C., Santa Cruz.

[Such large knots are now known to be caused by bacteria. There are

also smaller knots or root enlargements which are caused by the nematode worm which also infests garden vegetables and orchard trees. You did the only thing that can well be done, if you burned the knots. If you have nematodes, the most thorough way to rid the soil of these worms is to keep the ground absolutely free of vegetation for two years.—EDITOR.]

The 1915 orange show for San Bernardino is already being planned.

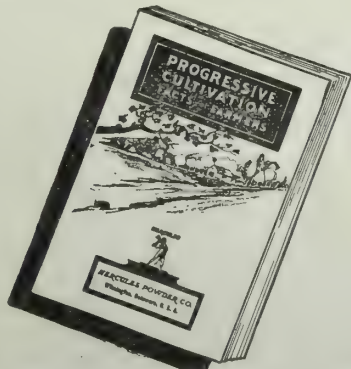
The Use Of Hercules Dynamite On Farm, Orchard and Ranch

THE series of bulletins on dynamite which will appear in this publication are published with one aim in view—to give you intelligent and accurate information with regard to the large place dynamite can be made to fill in your work.

Every statement made with regard to the use of Hercules Dynamite will be absolutely accurate and based on results obtained in actual field work. The various diagrams and plans will show the best methods of using dynamite. The illustrations showing the results obtained from the employment of Hercules Dynamite will be copied from actual photographs.

We are always glad to give any information or assistance to those interested in the use of dynamite. Thousands of men whose interests are the same as yours are saving time, labor, and money by its use. What is equally important, they are getting better results.

We urge that in justice to yourself and your work, you send for a book which we have published, entitled, "Progressive Cultivation." Use the coupon in the corner of this announcement.



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Please send me a free copy of your book, "Progressive Cultivation." I am interested in Dynamite for



Tree Planting

The two illustrations above show fully the value of using dynamite in planting trees. These drawings are exact copies of photographs of two trees planted at the same time and in the same orchard. The one on the left was planted in a spaded hole, the other in a dynamited hole. The growth and development of the latter is almost twice that of the former. This difference always shows when Hercules Dynamite is used.

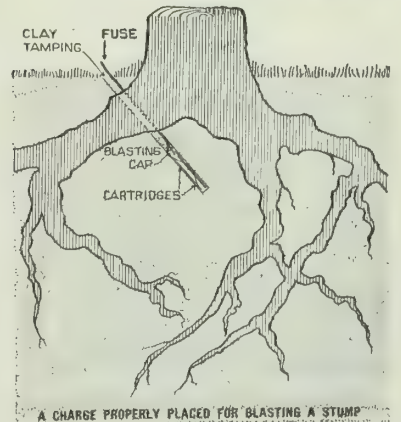
The ground is thoroughly broken up. The roots have a chance to spread in a natural manner. Also the work of planting is done more quickly and at less expense. In "Progressive Cultivation" are given interesting details with regard to the use of Hercules Dynamite for tree planting. Are you familiar with the method and its results?

Stump Blasting

Every man who has had experience in pulling stumps without the aid of dynamite knows only too well the amount of labor and time involved.

When you have land to clear, use Hercules Dynamite. You not only save labor and time—and, as a result, money—but you also thoroughly break up the subsoil and very effectively prepare the land for cultivation.

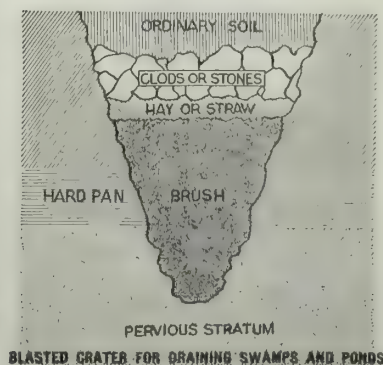
The diagram given shows the best way of removing one kind of stump, that with matted, spreading roots. When dynamiting a stump with a tap root the charge should be placed differently to get the best results. "Progressive Cultivation" tells just how stumps of various kinds can be most readily removed.



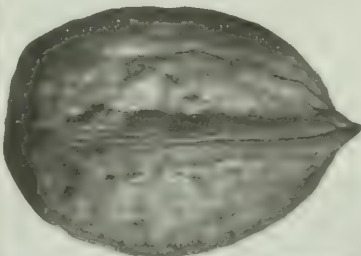
Drainage Work

The draining of swamps and ponds can be done better with Hercules Dynamite than by any other means. There are several ways in which dynamite may be used. We have room to illustrate only one of them—the crater method. By this method the hard soil forming the bed of the swamp is broken up and the water drains off through the loose stratum below.

In "Progressive Cultivation" full details with regard to drainage work with dynamite are given.



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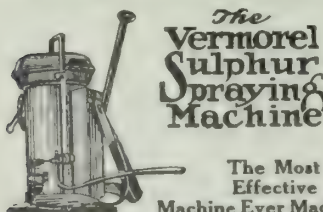
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(Signed) **FRED T. BIOLETTI,**
Professor, University of California, Berkeley.

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WEISSBAUM PIPE WORKS,
160 Eleventh St., San Francisco.

AGRICULTURAL REVIEW.

Citrus Fruit Doings.

Preparations are being made by the packing-house people in Tulare county to handle one of the largest crops of Valencia oranges that the district has ever turned out, present estimates being slightly over 600 carloads. The fruit is sized up well, has an excellent color, and is ready to be picked as soon as the southern and Florida fruit is out of the way.

Reports from San Bernardino are to the effect that there were 4244 cars of oranges started Eastward over the Santa Fe railroad, during the month of March, from that place. This brings the total for the year over that route to 9,136 cars, and April is expected to show the greatest shipments of the year, fruit men estimating that there will be 200 carloads per day for the entire month.

Orange shipments dropped off a little from the Riverside district last week with a total of 222 cars of oranges. This makes about 900 cars for the month of March, and it is thought that the county should pass the 2,000 mark by the middle of April.

What is planned to be the largest acreage of olives, in one body in San Joaquin county, will be planted at an early date by C. H. Owen, of Stockton, who will plant 300 acres in the neighborhood of Farmington and a 40-acre tract near Manteca.

Deciduous Fruit News.

What promises to be a big thing for the green-fruit shippers of the State is the securing of stopover privileges over all of the transcontinental railroads. This will allow the storage of grapes, preserved in sawdust, at any point that may be desired by the shipper and allows for one stoppage in transit of carload shipments on the way East. This will mean a market for 700 or 800 cars of fruit that has not heretofore been open to shippers.

Growers of apricots are now being offered 8¼ cents per pound in Kings county, and while there is a large crop of this fruit in sight at the present time, growers do not seem inclined to sell at that figure. It is reported that several buyers are in the field, but that they are meeting with little or no success. The new cannery at Armona is expected to greatly aid in clearing the market of the seemingly enormous crop in that section.

The fact that the Powers Fruit Co. has been abandoned, and that the organizer has associated himself with the Pioneer Fruit Co., is given as a reason for the belief that the Sacramento firms are trying to stop independent firms from operating in the San Joaquin valley territory this year.

The Fresno county Board of Supervisors were expected to take up the appointment of a horticultural commissioner at their meeting last week, as at present there is a vacancy in that position. F. P. Rouillard was considered the most likely candidate, as he recently passed high in the State examinations for that position, and has been holding down the job temporarily.

Word comes from Banning that the cannery at that place is being enlarged so that the institution will be capable of handling 90 tons of fruit each day. Last year's output is reported as being all sold and as having met with universal satisfaction.

Winters is also to have decided improvements made to the local cannery, and the owners are expecting to handle large quantities of cherries. Later in the season it is planned to pack a large quantity of tomatoes.

What is said to be the tenth packing house for Dinuba is being erected by a local company of that place. The plant will be a large one and will enter into the business of handling green fruit and vegetables.

Preparations are being made by Logan Whitehurst, of Gilroy, to plant 150 acres of land located on the Santa Cruz range of mountains, to apples. This was formerly covered with redwood timber.

The almond growers of Oakdale have decided to form an association that will be a part of the California Almond Growers' Association. About half of the growers in that section have signified their intention of joining the association, and others are expected to follow at an early date.

Field Crops.

A correspondent from the East, who is evidently well posted on market conditions, writes to one of the produce companies in Lompoc that the white beans that are now being raised in this State are larger in size than the Eastern trade cares for, and states that unless California bean growers go back to raising the smaller varieties that they formerly grew, the sale for California beans will be materially reduced in the East.

Alfalfa cutting has started in most of the alfalfa sections and while much of it will likely be damaged by the recent rains, the rapid growth being made by the added rainfall will more than compensate any losses in that respect. A report from Porterville states that the Porterville Alfalfa Co. started cutting their 1600-acre alfalfa tract last week.

A report from Healdsburg states that local hop buyers are in that field looking for 4000 bales of hops at 17½ cents per pound. The growers who are holding the crop for an advance are still refusing to sell, as they believe the market manipulators will be compelled to advance the price.

The grain crop of the State now seems assured, and from many districts comes the report that this will be the bumper grain year. Some grain is reported to have started lodging, at this time, but as a rule the crop is in fine condition.

The thinning and weeding of 2500 acres of sugar beets has been started by the San Joaquin Valley Sugar Co. on land located near Alpaugh. The prospects now are that the crop will yield a heavy and high-grade beet.

Vineyardists' Meetings.

The vineyardists of Kings county have formed a large organization in order to fight the State prohibition campaign, as it is feared that such laws as are being agitated would strike the grape-growers a hard blow.

Plans are being made by the San Joaquin Table Grape Growers' Association, to market its own grapes in the Eastern markets this year.

A convention and lecture was held under the auspices of the State Viticultural Commission at St. Helena last week, at which time speakers told of

the importance of the industry to the State of California.

Truck-Growing News.

Melon-growers in the Turlock section have recently had shipped to them by the State Horticultural Commissioner, some 23 boxes of ladybirds that will be used in combatting the melon aphid. Owing to the early and rapid growth of vegetation this year,



If You Want to Beautify Your Grounds

There is no better way than to communicate with us, and get our estimate on trees, shrubs, and plants best suited to Californian conditions.

We make a specialty of

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We still have fruit trees, nut trees, grape vines and berries for late planting.

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ORANGES
Washington Navel
Valencia Lates
And all other varieties.
LEMONS
Lisbon Eureka
Villa Franca
POMELOS
Marsh Seedless
and Triumph.
We also have a good stock of all the leading budded varieties of **AVOCADOS** and have a magnificent stock of **LIVES**

Get our Prices Last Mission, Manzanillo, and other varieties.
ILLUSTRATED CATALOG FREE.
Lists and prices all stock carried by us—over 2000 varieties of citrus and deciduous fruits, ornamental trees, vines, plants, etc. Write for your copy.

Roeding and Wood NURSERY CO., INC.

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ORANGE SEEDLINGS

CHOICE FLORIDA SOUR SEED BED STOCK
\$10 Per 1000

FRANK D. KLOCKNER, Prop.,
51 N. Chester Ave.,
Pasadena, Cal.

this pest is unusually active.

Present estimates are to the effect that there will be 500 carloads of asparagus shipped East from this State this year, with an average value of \$800 per car. Prices in February and March were extra good, but it is thought that a slump is sure to follow.

Buyers from three large commission houses of San Francisco were in Watsonville last week, endeavoring to contract for this year's strawberries. It is claimed that heretofore this business has been controlled by three other firms, almost exclusively, and that the new buyers will be compelled to offer the growers better prices.

Plans are being made to make the annual bean-growing contest, to be held in Ventura county this year, one of the best ever. The contest will be open to all pupils of school age, and it is hoped to secure \$500 to be used as prizes.

Irrigation and General.

Determined in their efforts to form an irrigation district, near Alpaugh, property owners who formerly endeavored to start such a district are hard at work getting signers and data to present to the Tulare county board of supervisors. Those who before fought the idea are being excluded from the present district.

The State Railroad Commission has just issued a ruling, deciding that the East Side Canal & Irrigating Co., of Merced county, has engaged in unreasonable and unjust practices in its method of distributing water. It is thought that the ruling will effect several other cases now pending, where in the consumers have made complaint of the treatment received at the hands of the operating companies.

The San Francisco-Oakland Terminal company has filed charges against several fruit-growers of Placer county, claiming that the growers have not paid for the irrigation water used in irrigating their orchards, while the growers contend that they were not furnished with a sufficient amount of water for their needs.

The annual picnic at the University Farm will be held at Davis May 16 this year, according to advices received from that place. As in preceding years, the affair will be in the nature of a basket picnic, and a large crowd is expected to be in attendance.

Lawton Thomas, consulting accountant for the California Farmers' Union, Inc., has just filed his annual report, in which he states that the organization has enjoyed a prosperous year and has been a great aid to growers who are members, and has also been a direct saving to them.

GRASS FOR LAWN.

To the Editor: What kind of lawn grass will be best for a lawn near Fruitvale, plenty of water but considerably shaded. The soil is partly adobe, but largely loam.—M. L. F.

[Blue grass and white clover mixed if you are willing to keep it cut short. Orchard grass will stand more shade than other grasses but it gets bunchy and stemmy. The plants' first named are best if well put in and well cared for.—EDITOR.]

The Alpaugh Beet Growers' Association organized recently with 2000 acres of sugar beets under its control.

CLASSIFIED ADVERTISEMENTS.

Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

TREES AND NURSERY STOCK.

DON'T Get Stung on Cheap Cull Trees for I am selling M. S. grapefruit, Eureka lemons, Washington Navels and Valencia's, all first class and true to name; small orders, 1/4-inch up, 75c; 1/2 up, 85c; car lots cut most 1/4; Florida sour seed bed stock eight to thirty-four inches and stocky; also sweet stock. Let me fill your order or we both lose money. W. O. West, Glendora, Cal.

FOR SALE—Peach, apricot, plum, prune, fig, apple, pear and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants, elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRANK & KOHMAN Nurserymen, Box 1212, Fresno, Cal.

BURBANK'S SPINELESS CACTUS. We are offering for immediate delivery the improved forage and fruiting varieties Burbank cactus. We guarantee all plants true to name. A liberal discount on orders for 1000 leaves. Send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or Jesse I. Jewell, Mgr., Santa Rosa, Cal.

WALNUT TREES—Late blight resisting varieties grafted and budded or California black and hybrid roots—Eureka, Franquette, Mayette, Neff's Profit, Concord and Placencia. Dr. W. W. Fitzgerald, Elks Bldg., Stockton, Cal.

SPINELESS CACTUS—Burbank's improved varieties. Now is the best time to plant. Send for price list. Also special \$5 order. SPIKELESS CACTUS PLANTATION CO., 315 South Hill St., Los Angeles, Cal.

WASHINGTON NAVELS, Valencia's. Marsh Seedless Grape Fruit, 1 1/2 to 2 ft high. Thrifty, budded trees. Bare roots packed in moss, at 35c each on cars Redlands; or by parcel post, 15c extra Carroll B. Smith, Box 9, Redlands, Cal.

AIM—IMPROVEMENT OF TREE TYPE—Pedigreed Citrus Nurseries. Selected stock. Sour seed bed stock up to 3 ft. tall. F. H. NUBICKEL, Glendora, Cal. Phone 388.

TREES—Special prices on grafted walnut trees. Oranges, lemons, apricots, pears, peaches—everything. Get my prices. A. R. Marshall's Nurseries Box 64, Santa Ana, Cal.

FOR SALE—Ten bushels Florida sour orange seed at a bargain. 800 Lisbon lemons. 1000 Mission olives. Franada Citrus Nursery Co., Ducor, Cal.

BERRY PLANTS AND RHUBARB—Everything in small fruits for garden and orchard. Send today for price list Louis F. Scribner, Pasadena, Cal. R. P. D.

BURBANK'S Giant Winter Crimson Rhubarb Plants for sale at a bargain J. R. STARKEY, R. 4, Sebastopol, Cal.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna Route 3, Riverside, Cal.

If you intend to plant OLIVES or RHUBARB, write for my free booklet. Alta Vista Nursery, Highland, Cal.

FOR SALE OR EXCHANGE.

STEAM HARVESTING OUTFIT FOR SALE—BEST ENGINE, HOUSER-HAINES HARVESTER (SEPARATOR NEW), OIL WAGON, WATER WAGON, COOK HOUSE, TOOLS, ETC., everything complete for the field. ALL IN FINEST CONDITION and offered at a BIG BARGAIN. Terms. Entire outfit can be seen in Stockton. STOCKTON ICE & FUEL CO., 33 South Eldorado St., Stockton Cal. PHONE 47.

FOR SALE—Portable pumping plant, International 8 H.P. gas engine and 5-inch pump, mounted on wagon, necessary pipe; all practically new; cost \$600; price \$300. M. P. STEIN & CO., Stockton, Cal. Phone, 421.

ORCHARDISTS: For sale very reasonable, JOHNSON IMPROVED TRACTOR. Good as new. Takes place of 12 horses. Just the thing for your orchard. See J. A. WINKELMAN, Mayhew, Sacramento County, Cal.

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TRACTOR AT A BARGAIN—1912 model Mogul; 45 H.P.; I. H. C. engine; first-class condition. R. F. SCHMEISER, Winters, Cal.

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NEW POWER SPRAYER for sale considerably below cost. Standard make. You can save \$50. Box 42, Pacific Rural Press.

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VICTORIA, AUSTRALIA. WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California no extreme heat or cold. Small deposit and 3 1/2 years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairying, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particular from F. T. A. Fricke, Box W. 687 Market St., San Francisco.

FOR SALE—150 acres in South San Joaquin Irrigation District, two miles from Manteca; county road on two sides; one-quarter mile from railroad facilities; \$125 per acre; easy terms. Inquire of E. POWERS, Manteca, Cal.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

"WE PAY THE FREIGHT"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. The Direct Supply Co. has combined with us. SMITH'S CASH STORE, 106 Clay St., San Francisco.

AIR SLACK LIME—H. B. Matthews 733 Merchants Exchange Bldg., San Francisco.

WANTED.

WANTED—Responsible party to take charge of our business in each county handling sale of Automatic Combination Tool, a combined wire fence stretcher, post puller, lifting jack, etc. Lifts or pulls 3 tons, weight 24 pounds. Sells readily to farmers, shops, contractors, etc. No experience necessary. Descriptive catalogue, prices and terms free upon request. Harrah Mfg. Co., Drawer O., Bloomfield, Indiana.

WANTED—Manager for demonstration plant for Spineless Cactus in every town in California and Arizona. Big commissions made. Write SPIKELESS CACTUS PLANTATION CO., 315 South Hill St., Los Angeles, Cal.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property. Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Highest wholesale price paid for Spineless Cactus. Write GEO. N. PAYNE, 315 South Hill St., Los Angeles, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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BRAE BROOK COLLIE KENNELS, Route 3, Box 69, Santa Rosa, Cal.—Puppies for sale by Lord Ormonde ex Brae Brook Babbie (Tri-colors), \$15 to \$25.

RUSSIAN WOLF-HOUNDS—Puppies and mature dogs of both sexes; special prices. GEO. A. SMITH, Jr., Corcoran, Cal.

Alfalfa Planting Time at Fairmead

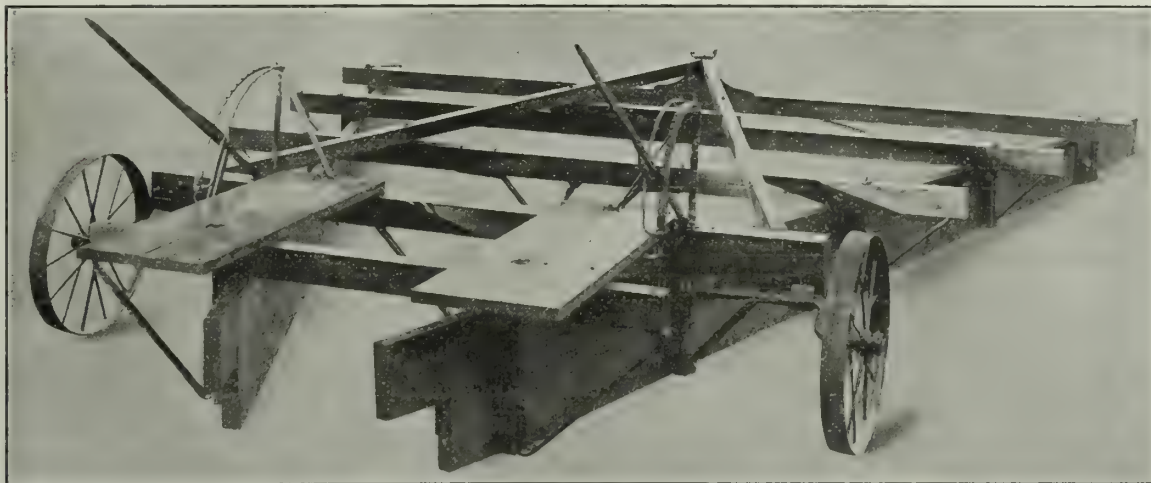
Thousands of acres are now being planted to alfalfa and fruit at Fairmead.

Rich, easy-to-work, proven alfalfa soil. Abundant water. Wonderful openings for progressive farmers.

Send this ad today with your name and address, for free booklet, "How to Obtain a Small Farm at Fairmead on Easy Terms."

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The Schmeiser Land Leveler and Checker



If you want to prepare your land quickly and in good shape for alfalfa or rice, you should know something more of these machines, that we can guarantee to do the work of 40 to 50 Fresno's in the same time. In writing us for full information, please state how many acres you have in mind preparing.

SCHMEISER MFG. CO., : Davis, Cal.

Constructive Agriculture—No. 14.

Cow Testing Association Pays.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

The work of cow testing associations is always interesting and instructive on account of the progress made toward higher producing herds where such associations are operating.

Usually the hardest job of these associations is to get a sufficient number of dairymen interested at the start. After the first year's work has been completed, enough interest is



How Home Mixing Makes European Farmers Prosperous

They buy straight materials and mix them into balanced fertilizers containing two or three times as much

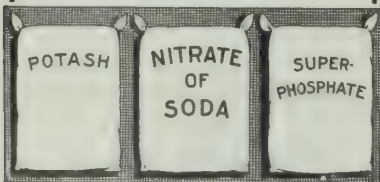
Nitrate of Soda

as high-priced American complete fertilizers contain. Your fertilizer should contain 4% of active nitrogen. Does it?

On land farmed for centuries, England raises 33 bushels of wheat per acre. We raise but 14. Europe imports 100% active Nitrate of Soda. You use dried blood, tankage only 60% to 70% active and you pay more for it.

"Home Mixing" is a book to help you increase your yields. Send your address to me on a postal card.

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Make Money Pulling Stumps!

Add new, rich, crop growing land to your own farm by clearing it of stumps. Clear your land now! Your Hercules is the best way when others see what it does. Big profits for you. With the

Hercules All-Steel Triple Power Stump Pullers

you can clear an acre a day. Hercules and power stump puller all over the civilized world—easiest to operate—most durable. Special introductory price, 30 days trial offer, \$3.00 a guarantee, on immediate orders. Write for big Free list of land clearing machines.

HERCULES MFG. CO.
112 22nd St.
Centerville,
Iowa

taken to insure a full membership for future years.

Among those associations that have gone through the primary stage of organizing is the Tulare Cow Testing Association, formed in 1912, beginning operations in May of that year with about 1000 cows. Before starting in earnest, a great deal of work was done by a few more progressive dairymen in securing enough cows. Wages of the tester, acid, and other expenses amounts to about \$3 a day, which sum would be a little less than the amount collected on 1000 cows at \$1.25 a cow.

That all might have a fair deal and at the same time provide protection to the association, the following contract was signed by each owner:

CONTRACT OF THE TULARE COW TESTING ASSOCIATION.—We, the undersigned dairymen, in consideration of the periodical (one day each month) testing of our cows during the season of 191...191... by tester hired by the board of directors of the Tulare Cow Testing Association, hereby agree to pay secretary-treasurer of the said association, the sum of one dollar and twenty-five cents (\$1.25) for every cow so tested for us. We hereby agree to pay this sum per cow in three installments in advance; Fifty (50) cents per cow we will pay on signing these by-laws; Fifty (50) cents per cow we will pay August 1, 191...; and twenty-five (25) cents per cow we will pay November 1, 191...

We, the undersigned dairymen, further agree that we will pay the fifty-cent and twenty-five cent installments when due upon the number of cows set opposite our names and upon all other cows tested in like proportion. It is hereby understood that if a member disposes of or loses any of his herd, the same may be replaced up to the original number. No allowance or rebate shall be allowed for cows disposed of and not replaced.

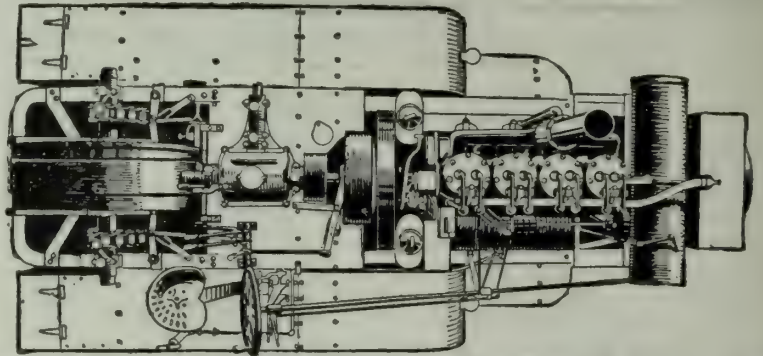
We, the undersigned, further agree to provide suitable board and lodging for the tester of the Tulare Cow Testing Association, and feed and stable for his horse, when said agent is actually engaged in testing our cows, including Sundays and holidays.

We further agree to permanently name, mark or brand our cows so that they may be readily recognized by the official tester.

It is hereby understood that this contract is not binding unless one thousand (1000) cows have been entered by May 1, 191...

It will be noticed that no fees were collected until 1000 cows were signed up, thus insuring the owner protection against the possibility of the plan failing. At the end of the first year, May 1913, the outlook for feed was very discouraging, in fact many of the herds had suffered on this account during the cold winter months and it was doubtful for a time whether the required number could be secured for another year, although the results had been surprisingly good, to say the least, in most cases.

TESTING PAYS BIG PROFITS.—We were told by one dairyman, that he found over 30% of his cows that were boarders, and his herd had been considered better than the average. Those cows were soon sold for beef and others purchased to replace them so that



Clean steel deck and running boards of 1914 Caterpillar. A flat surface—no boxes or cans. Operator moves around freely. See protected gears.

Built For Years of Work

The 1914 60 and 75-h. p. Caterpillar is built like a battle-ship—for service and hard knocks. There is nothing to compare it with but our own 1913 model, and we have made it even better than that. The best of our 43 years of manufacturing experience—the best brains of our engineering staff from all our factories—are a part of it. Nothing is guesswork in the

CATERPILLAR

Reg. U.S. Pat. Off.

The material used is strong and rightly placed—the methods of construction the simplest possible—by getting them simple we save weight. The new transmission works like that of an automobile. Cut steel gears are used—running in oil—in a dust-proof case. The new steel track is heavy and strong. The new frame is heavier and well braced. Improvements have been added to the motor. Steel shafts have been made larger. Ring sprockets are used in place of solid sprockets to reduce cost of replacements. A steel first-motion chain—the best type—is used. A steel deck and running boards, instead of wood, make cleaning easier and strengthen the frame.

All parts are inspected with great care. From foundry to paint shop every effort is made to insure against breaks and delays.

Caterpillar Service Department

The Caterpillar Service Department shows our interest in the purchaser—after the purchase is made. Expert Caterpillar engineers go constantly from machine to machine, just to offer the owner and the engineer information and suggestions on how to get results. They help—in hundreds of little ways—to better your work.

This service costs you nothing—after you become a Caterpillar owner.

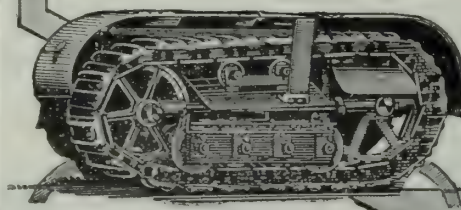
Besides all this, remember that the Caterpillar works anywhere—on the ground, soft, wet or sandy, as a tractor should do. It does all things well—rather than a few things poorly.

The Caterpillar is built in three sizes, 30, 60 and 75-h. p. We furnish nearly everything for the farm—plows, disc harrows, harrowers and scrapers—all strongly built for tractor work.

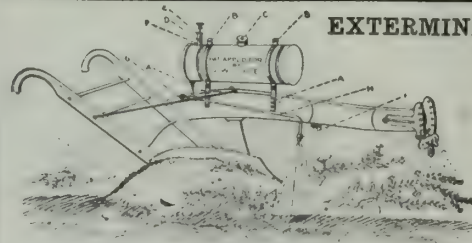
Send to the nearest branch for bulletin C 5 describing 1914 Caterpillar construction in detail.

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EXTERMINATE MORNING GLORY

Johnson Grass,
Bermuda Grass,
Noxious Weeds and
Injurious Insects
with **NONPAREIL**
and the **PRESTO**
PLOW TANK

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, \$8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

The growing season and not the dormant period is the right time to do the work.

One large grower has purchased up to date this year \$2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphids, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

WHEELER, REYNOLDS & STAUFFER

624 California Street.

San Francisco, Cal.

the cost of testing was many times made up to the owner.

The average production for all cows completing a nine months' test in their lactation period was 250 pounds of fat, one herd having averaged over 300 pounds of fat.

The results of finding the boarders are two-fold. First they were not profitable to milk, but what is of greater benefit the heifer calves are now picked from the best cows instead of hit or miss as before; and, selected in this way, the future herds will more than compensate the Association's yearly expense of \$1.25 per cow. This has been shown already when a heifer with her first calf sold for \$90, due to the fact that her dam had produced 325 pounds of fat according to the Association's record.

Although not completed, the past year which will end May first is proving a better one for the whole Association, as feeding conditions have been closer to normal, and with the benefit of last year's culling, the average production this year will be, it is thought, much higher.

At present, about 950 cows are under test from 35 herds. Some of these herds require two days' work by the tester on account of their size, while in other cases three or four small herds, close to one another, are all tested in one day. A regular route is laid out, so that the tester visits each herd once a month. Samples are taken of two milkings and the milk weighed. The dates are figured back 15 days and ahead 15 days so that the amount of fat determined for the one day, when multiplied by 30 days in the month, gives the monthly production. The reason for figuring in this way is that the flow, when testing is done once a month, is either on the increase or on

the decrease, according to how far along in her lactation period the cow is. If the production for the month were figured entirely on the past or future 30 days it would be inaccurate but by figuring both forward and backward a good average is obtained. Although many maintain that tests so far apart are not reliable, it has been ascertained by numerous tests that the once a month system is never more than 5% off, one way or the other, and that is accurate enough for ordinary dairy operations.

Perhaps the best recommendation for the accuracy of these associations is shown by the confidence shown in them by the American Jersey Cattle Club. For over a year now, registered Jersey cows have been on test in this association, the only extra requirement being that four milkings a month be weighed and tested by the official tester and that the owner weigh the milk every milking the balance of the month. Only 12 head can be tested in this way in each herd but it allows the pure-bred breeders an opportunity of doing official yearly testing at minimum charge.

Besides the added benefits of the selection of cows and heifers, another beneficial result has been noticeable in several cases this year where herds were offered for sale.

One dairyman told us that he received an average of \$120 for his grade herd, the extra good price being attributed to his record in the testing association. Two others who had belonged to the association from the start also found that the records given out by the association were responsible for the ready demand and high prices they received.

As one dairyman remarked "the only trouble with the testing associations is that we haven't more of them."

FERTILIZING SAND FOR ALFALFA.

To the Editor: We are in Merced county. We have no money to throw away, being like a good many in a new place short of money. We are thinking of trying some fertilizer on alfalfa that we intend to sow this spring. Can you tell me what is the best for this kind of soil being quite sandy? What can it be bought for by the ton, who has it for sale, and are the parties reliable, how much should be sown and the cost per acre? Do you think it would pay a man short of money to try the fertilizer? Which is best, to broadcast alfalfa or use a drill and how deep should it be drilled?—E. L., Atwater.

[Your soil is more likely to lack humus and nitrogen than anything else essential. This can be supplied best by barnyard manure of which perhaps you can get enough in Merced. Don't use the straw coarse kind; your soil is already loose enough. It will probably be wise to get soil from an old alfalfa field and sprinkle it over the proposed alfalfa field 300 pounds per acre. Our advertisers are reliable. Write them for prices and composition of their brands if you still wish to use them. Drilling the seed about an inch and a half secures even distribution at even depth. Less depth would be necessary on heavier soil. Write the State Commission of Horticulture, Sacramento, asking for their February Bulletin. They will put you on the free mailing list on request.—R. E. HODGES.]

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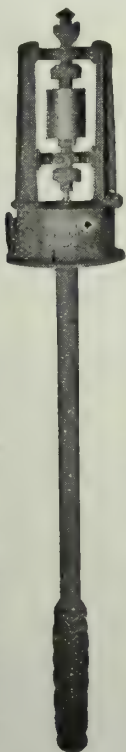
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The Value of Registered Mares.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

The advantages derived from sound and heavy horses for farm power have been apparent to most farmers for many years, yet there has been less progress made by farmers in the breeding of pure-bred horses than of any other kind of live stock.

That the better bred horse pays is shown by the fact that most every progressive farmer has for years been breeding his grade mares to registered stallions, and the results have been most pronounced. Yet there has been a hesitancy on the part of many to invest money in registered mares. Until more recent years this has very likely been due largely to the general scarcity of the mares and a consequent high valuation placed on those that were for sale, but this condition seems now to be relieved since the breeding of registered animals has gained more headway in the State.

At the present time it would seem that almost any farmer who needs one or more work teams on the ranch could

better afford to have pure-bred mares than almost any other kind of stock.

While visiting a breeding establishment the past month, we heard the owner offer to sell two very fine two-year-old fillies at \$350 each. Both of these animals were well bred and sound, able to do work on the farm that would require three or four ordinary horses to do. Not only would they do more work for the owner, but colts from such mares would sell far more readily and at a higher price than the colt from a grade mare. In fact, the extra hundred dollars that one would invest in such animals would be repaid in the higher price received for the first colt, as the horse buyer is always looking for that kind of animal.

FOR EXAMPLE.—An illustration of what can be accomplished in a short time with young pure-bred mares is the experience of James McCord on his ranch near Hanford, Kings county. Two years ago five young Shire mares were purchased in the East by Mr. McCord, who has long been in the mule and horse business. Since that time these mares have been used for regular farm work and have already foaled seven head of fine young colts. Any of these at two years old are worth the prices before mentioned, so it will be seen that the investment has paid in this case.

With the prospects of much cheaper feed than we have had for the past two or three years, it seems evident that the higher bred horse is, like all other kinds of live stock, the logical thing for farmers to raise.

PURE-BREDS MAKE BOYS BETTER CITIZENS.

(Continued From Page 441.)

bulls Rowena Maid Mutual 46304, and Rowena Netherland Acme 97316 are being used as herd sires, the former having been in use for some time, while the latter is a younger animal.

GROWING THE FEED, TOO.—Although a large part of the land is planted to walnut, orange, and lemon orchards, much of the open land is planted to alfalfa, vegetables, and field crops each year. This allows the growing of feed for the dairy and hogs, the principal feeds being alfalfa, and corn for silage. Beet pulp and bran are grown to supplement the silage.

The chief drawback that the dairy has had to contend with, was old barns and equipment, but work has been started on new buildings this year, which will consist of a milking barn, with a capacity of 60 cows, having cement floors, James stanchions, manure carriers, etc., calf pens and houses, and bull pens. It is estimated that these improvements will cost between \$4000 and \$5000, not counting the labor of the boys, which is a big item.

The hog feeding pens are made of cement, as in feeding garbage cleanliness is required. The Berkshire stock carries considerable Masterpiece blood and as before stated will be built up from this time on, a new sire having just been purchased in the east for that purpose.

Situated as it is, one might presume that the market for young stock would be limited, but we were told that young sires have been sold as fast as they were raised, and that the

demand for female stock there, as elsewhere in the State, far exceeded the supply.

From the success of this undertaking it would seem that the State could not do a better work for such institu-

tions, than the establishment of such herds; as it has, without doubt, a great influence on the future manhood of the students, who leave the school with a clear knowledge of good dairy and breeding practices.

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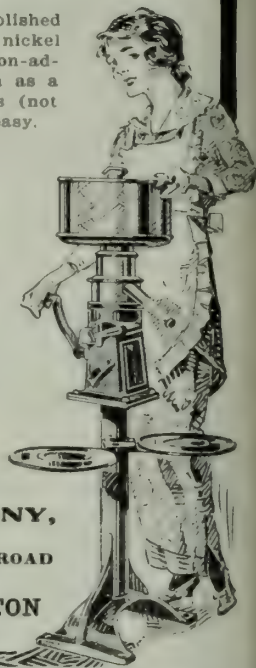
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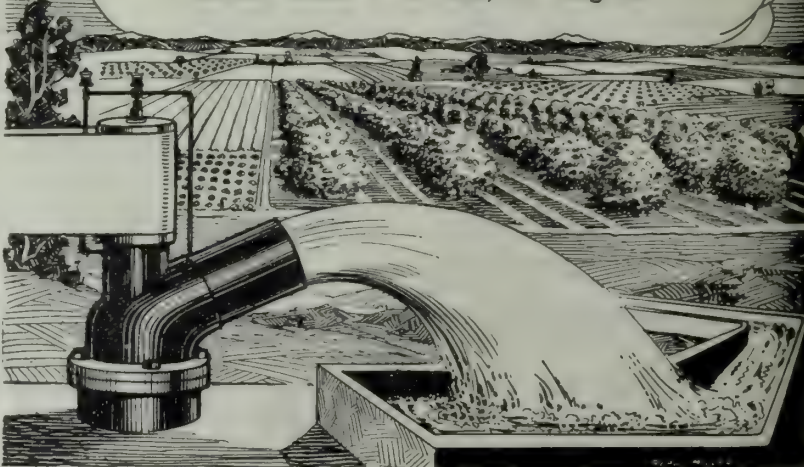
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With the Live Stock Men.

Henry Wheatley, of Napa, received two fine Shire stallions last week that were direct importations from England. Mr. Wheatley has the reputation of handling high-class stock, and these are said to be in keeping with past importations.

We wish to call attention to the Poland-Chinas being offered in another column by Charles N. Odell, of Modesto. Although Mr. Odell is a young breeder, he has fine blood lines in his herd, and the stock he is now offering are good individuals that should meet with a ready sale.

The dairymen of the coast section north of San Francisco recently organized a dairymen's association at Valley Ford. This is the first of a number of similar associations to be formed in the coast counties, it being the plan to have a central organization made up from these smaller branches.

Several sales of spring lambs were made last week in the Livermore valley at \$4 per head. There is said to be an exceptionally good demand for lambs this year, and it seems likely that prices will go still higher, as lambs and mutton sheep are almost as scarce as beef cattle.

According to reports from Gridley, local dairymen of that place are about to take over the Gridley creamery and ice plant and form a co-operative plant.

Word comes from Placerville, Eldorado county, that applications have been approved for the grazing of 8,200 cattle, 303 horses, and 15,500 sheep with a number of applications yet to be acted upon. There are five ranges still to be opened this season, they being Nevada Point Range, Rock Creek Range, Bottle Hill, Ditch Range, and Stump Meadow.

Two of the largest consignments of Argentine beef, received at New York from London, this month, were held up by Government inspectors, as it was thought that formaldehyde had been used in preserving it.

The Gilroy creamery has been opened by Mr. Peterson, of that place, who has given the plant a thorough overhauling.

Word comes from Davis that the new beef cattle barn, at the University Farm, is rapidly nearing completion and that a two-story laying house has just been finished for the poultry department. The report also states

that the amount received for all live stock sold since the first of July has totaled about \$12,500.

The City Bureau of Weights and Measures of San Francisco recently seized 500 milk-cans from three dairies, which were shipping to the city trade. This is being done under the new net container law that recently went into effect.

Miller & Lux have shipped 72 Durham bulls and four pure-bred stallions to their ranches in Humboldt county, Nevada.

The Model creamery at El Centro has recently been acquired by R. H. and E. J. Clark and will from this time forward enter into the field of that section.

Reports from the Portland Union Stock Yards show that the cattle market is steady to firmer. Tops for light-weight steers were \$8 and choice cows and heifers at \$6.75 to \$7. The hog market was irregular, tops closing at \$8.60 to \$8.70. Both lamb and mutton were on a higher level, wool wethers at \$5.50 and ewes at \$5.25. Spring lambs featured the late market at \$10 and \$10.75.

ANNUAL HOLSTEIN BREEDERS' MEETING.

[Written for the PACIFIC RURAL PRESS by W. H. SCHRADER.]

The annual meeting of the California Holstein Friesian Association, was held at Modesto, on the evening of April 2. About 75 diners sat around the banquet board, which was presided over by P. H. Davis of San Anselmo, Marin county.

Among the speakers, F. L. Morris, of Woodland, made a strong argument for official testing, giving as an example what the A. W. Morris Company has accomplished in a short time, along that line.

James W. McAllister Jr. of Chino, called attention to the great advance of the Holstein breed in the increased average price of sales from \$150 to \$300, and to the rapid increase in the membership of the National association. H. B. Goecken, of Livermore gave some interesting facts concerning the Holstein in its native country of Holland.

Prof. Gordon H. True of the State University rejoiced in the fact that the old hatred among the different breeds has given way to friendly rivalry and stated that service is the keynote and the aim of the University in its relation to the stockmen.

A class of young men from the University Farm at Davis, helped with college song and a combination college and Holstein yell in making the evening's entertainment complete.

At the executive meeting which followed A. W. Morris presiding, officers were elected as follows: P. H. Davis, President; Jas. W. McAllister Jr., Secretary-treasurer.

The by-laws were amended as follows: A provision requiring members to file with the secretary, registration papers of all their registered stock, was stricken out. A provision making it the duty of members to report any dishonorable practice by any Holstein breeder to the association was adopted.

To defray the expenses of putting the association on the map at the Ex-

position in 1915, it was decided to increase the dues for 1914 from \$1 to \$5 per member. President Davis appointed the following members to act as an executive committee: A. W. Morris, A. B. Kendall, and G. U. Clark.

LIVE STOCK DIRECTORS MEET.

The first meeting of the new board of directors of the California Live Stock Breeders' Association was held April 4 at the Palace hotel in San Francisco. The main point taken up was the making of a program, as suggested by D. O. Lively, for future work, and in this respect the directors showed that we may expect big things. Space does not permit us to give the program in detail except to say that if carried out, it will mean a great deal to live stock in California, and in order to help, a salaried secretary is to be hired to devote his entire time to the association work.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

SWINE.

THOROUGHbred JERSEY-DUROC HOGS—Most prolific, hardest and safest hogs to breed. Weanlings, \$10 to \$15; bred gilts, \$25 to \$60. D. R. Price, Ellsworth, San Joaquin Co., Cal.

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REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, \$15.00 up. Ed E. Johnson, Turlock, Cal.

REGISTERED O. I. C. SWINE—All from premium stock. C. D. Conway, Lakeport, Cal.

TAMWORTHS. The finest bacon hog All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Brown, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

DUROC-JERSEY BOARS—Weanlings. Lindquist Bros., Turlock, Cal.

TAMWORTHS—The largest bacon breed. Address Box 296, Fallon, Nev.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

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SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS—Gay Lad 6th head herd. O. Harris & Sons, Harris, Mo.

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FOR SALE—30 head of coming four-year-old mules, also 80 head of yearling Shropshire bucks. Inquire of J. R. Bloom, Dixon, Cal.

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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

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YUBA DAIRY CO.—Fine herd of Holstein and Durham cows for sale; 75 head of heavy milkers, all in good condition. Write to Marysville, Cal., for further information.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

THREE REGISTERED HOLSTEIN YEARLING HEIFERS for sale, from good A. R. O. dams. K. W. Abbott, Milpitas, Cal.

REG. GUERNSEY BULLS for sale. Grapeville Farm, Mayhew, Sacramento county, Cal. A. B. Humphrey, Prop.

FOR SALE—50 very high-bred grade Holstein heifers, from 18 to 24 months old; all bred to purebred sire. E. J. WELDON, Box 962, Sacramento.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REG. HOLSTEINS—Bull calves, Jullana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

YOUNG A. R. O. COW and a good bull calf for sale. K. W. Abbott, Milpitas, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

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N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

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201 Howard St., San Francisco.

Jerseys Sell Well at Auction.

[Written for the PACIFIC RURAL PRESS
by W. H. SCHRADER.]

The big happening in Jerseydom for this year took place at the Breeders' Consignment sale, held at the Hillier Jersey Farm, near Modesto, April 2,

the best prices although the fact that 31 cows sold for an average price of \$237 a head indicates that their breeding was appreciated.

Among the largest buyers were C. M. McFarland of Tulare, who paid the banner price of the sale, \$950, for

sey of Modesto, who purchased 9 cows and a young bull; R. L. Waltz, Hanford, who bought six cows and the bull Gerties Son; N. H. Locke, Lockeford, who bought five head of female stock including the four-year-old cow Oxfords Minerva at \$305 and the bull Leda's Laddie of Lockeford; A. A. Jenkins, of Tulare bought three cows, two heifers, and a young bull; J. B.

Odell, of Modesto, purchased the yearling bull, Brown Bessies Lad for \$200.

The day was an ideal one for the sale; and the attendance was large, showing that the interest being displayed in pure-bred Jerseys is greater than it has ever been. The auction was conducted by Benj. A. Rhoades of Los Angeles, who lived up to his good reputation at this sale.

Although this is the first consignment sale held in the State there is every reason to suppose that many will follow in the future.



OXFORDS LORNA, H. R. No. 249922.

First prize two-year-old and junior champion, Stanislaus Fair, 1912; third prize two-year-old, Sacramento State Fair, 1913. Sold at the breeder's consignment sale on G. O. Hillier Jersey Farm, Modesto, for \$320.

when over 90 head of pure-bred and registered Jerseys, of all ages and sexes were sold to buyers from all parts of the State.

As a rule the young stock brought

the herd bull King Polo of Bleakhouse. He bought seven of the best cows also, among them being Irene Dewdrop \$360, and Oxfords Lorna \$320. Other buyers were A. L. Cres-

Jessup, Bakersfield, bought the cow Oxfords Nellie Signal at \$290 and a heifer at \$225; J. B. Thorpe of French Camp purchased the cow Owl's Countess Bessie at \$250; and Chas.

SORGHUM FOR GREEN FEED.

To the Editor: I have 120 acres of burr clover, filaree, and wild grasses which of course will soon be dry feed for my 24 head of milk cows. I am getting land ready for alfalfa and have no green feed for the summer. Would it be advisable to grow sorghum for the summer and plant the alfalfa in the fall?—L. C. V., Merced.

[Yes; either sorghum or Indian corn, planted after frost danger has passed, on land which you work now to save moisture from evaporation, will give you plenty of summer feed.—EDITOR.]

STEERS ON ALFALFA PASTURE.

To the Editor: Will you kindly let me know through the medium of your paper if it is true that steers and bulls will not bloat on alfalfa and can be let to run in fields without danger.—A. L. W., Barstow.

[Any bovine will bloat if he gets too much damp alfalfa in his interior. Bulls and steers are rather less liable because their appetites are less fierce than cows and they enjoy spending more time in looking at the scenery and doing politics.—EDITOR.]

Save Your Alfalfa Crop

Buy an Ideal Green Feed Silo now and fill it with your first cutting of alfalfa, which insures you against losses from wet weather in attempting to save it for hay.

This first cutting alone will pay for an Ideal Green Feed Silo the first year, as it is almost worthless for hay even if you should be successful in getting it properly cured, on account of it being full of weeds.

By siloing this crop, you clear that portion of your ranch of weeds as there is no chance for these weeds to reseed again and, at the same time, your ensilage is available just at the time your pastures are burnt-out and feed is most expensive.

Weather conditions, drought, burnt-out pastures and high prices of mill feed will not worry you if you have a silo.

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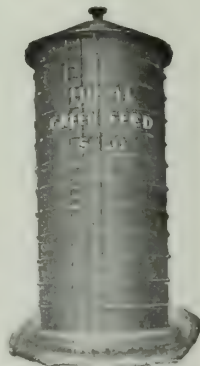
ENSILAGE CUTTERS AND ALPHA GASOLINE ENGINES.

DE LAVAL DAIRY SUPPLY CO.

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HILLCREST STOCK FARM

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SHORT HORN CATTLE SHROPSHIRE AND MERINO SHEEP

ATTENTION, SHEEPMEN

My pure-bred, range-raised yearling Shropshire and Merino rams will be out of mountains about April 15 and ready for inspection at my place.

Shropshires sired by rams imported by me from England in 1911.

● Fills Your Silo Quickly With Less Power and Labor ●
You can operate this machine with a 4 h. p. gasoline engine. It's the lightest running blower type of ensilage cutter made—The *thrusting, blowing, lifting force* carries the ensilage in a steady full stream rapidly up into the highest silo without waste of power. The ensilage packs perfectly and keeps sweet and succulent. The

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is easy to set up and take down. Simple in construction, not easy to get out of order. The entire frame is one solid piece of semi-steel. The bearings are always in line, run smoothly and will not heat. The feeding mechanism is geared to the main shaft—always gives you the desired length of cut. The *Papec Ensilage Cutter* is not chain driven, but has heavy gears which transmit all the power. It cuts ensilage perfectly and swiftly—as fast as you can bring the corn to the machine.
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Box 17 Shortsville, New York

Sold by Delta Construction Co., Sacramento, California.

WAUKEEN STOCK FARM

Offers some choice Poland-China gilts, both bred and open. All full sisters to one a breeder offered me \$75 for at 12 months old. \$10 up. CHAS. N. ODELL, Modesto, Cal.

Veterinary Questions.

[Answered by DR. E. J. CREELY, San Francisco Veterinary College.]

THRUSH.

To the Editor: Will you please tell me what to do for my horse? He has what they say is thrush in one hind foot—was troubled with it when I got him four months ago, but he strikes one hind foot against the affected one and has made it tender as a boil—not under the foot, but inside the hind quarter. He is eleven years old and sound every other way.—C. E. W., Pleasant Valley.

Cleanse with Tincture of Iodine and cotton, after which insert Iodoform and Bismuth subnitrate equal parts twice daily.

LOSS OF MILK.

To the Editor: We have a four-year old cow that practically went dry about ten days ago, giving about a tin cup each milking. She is not due to be fresh until September. There seems to be a small cake in one side of the udder. Her appetite is good. We feed her alfalfa hay and bran morning and night and oat hay at noon. Can you advise what might cause this?—A. R., Fair Oaks.

Loss of milk may be due to many causes, and I could not diagnose without a better history.

PULL COLT'S TEETH.

To the Editor: We have a four-year-old colt that has not shed her first set of front teeth, and the second set are coming out above them. Should we have them taken out or will they drop out?—A. R., Fair Oaks.

Pull the milk teeth of the horse.

HARD TO MILK.

To the Editor: I have a Jersey cow that until two weeks ago was easily milked. One of the front teats suddenly became very hard to milk, and now it is almost impossible to get any out of it. Can you tell me what is the trouble and what can be done for it?—C. V., Acampo.

Stenosis or narrowing of the milk duct, due to injury or infection. Paint a milk tube with iodine and insert to remove milk twice daily.

STRINGY MILK.

To the Editor: Milk from one teat of one of my cows is periodically stringy or in chunks like thick cream only it won't melt in hot water. There is no soreness, though she has been that way about six weeks with occasional returns to normal. She eats good: was to calve early in March but lost the calf three months early and kept on giving milk with a little increase. What will help it? I am not using the milk.—G. S. L., Winton.

Inject normal salt solution (1 teaspoonful salt to 1 pint water) and hydrogen dioxide alternately twice daily. Be careful not to infect the other glands.

PROJECTING TEETH.

To the Editor: I have a mare six years old that was all right till last September, when she fell off in flesh, lost her spirits and seemed like an old hack. She used to be biting and eating wood in the stable or at fencing at every opportunity, but has not done so this winter. She has a craving appetite but her food does her no good. She is weak and thin, hair shaggy and rough. Let me know what can be done for her?—H. L. G., San Jose.

This is due to projecting or loose molars. Have the best veterinary expert dress and treat the mouth after which use the following: I recommend Dr. H. A. Spencer, San Jose.

Nux vomica, pulverized, 2 ounces Iron Sulphate 1 ounce; Pulv. Gentian root 2 ounces. Mix and make 16 powders, give 2 daily. Report progress in 30 days.

LUMPY JAW.

To the Editor: What shall we do with a cow which has a small hard lump fast to the jaw?—SUBSCRIBER.

Lumpy jaw is easily cured by filling the animal with iodide potash gradually. It can be given in capsules, but is rather difficult for a layman to apply this way. If you do not wish to attempt the capsules, mix the iodide with its own weight of raw linseed oil and double its weight of water. The iodide of potash dose is given below, to be given twice daily. One dram per dose for the first week, 1½ the second, 2 the third, 2½ the fourth, 2 the fifth, and 1½ the sixth week. Cut into the enlargement and pack with cotton saturated with tincture iodine once daily.

BLOODY MILK.

To the Editor: I would be much pleased to have some information in regard to a cow that gives a pink blood stained milk from one teat. There is no sore nor hardness in her bag.—W. C., Woodland.

Inject hydrogen dioxide twice daily, thoroughly massaging the gland, then strip clean, after which inject 1 dram iodide potash in 1 cup warm water once daily.

COLT DISTEMPER.

To the Editor: We have two horses with an unknown disease. They first had sore throat and a slight discharge which did not last long. They also had a cough. After a week the legs began to swell from the feet to the body, then came a slight swelling about the head. One of them broke out under the jaw before swelling began. They have bright eyes and eat well, cleaning up the manger every night. Is it wrong to feed them anything heating, such as barley?—G. M., Tuttle town.

The trouble is strangles, or colt distemper. A veterinarian should be called early in the disease as many cases result fatally from complications such as pneumonia, dropsy, or multiple abscesses. Feed only invalid food (hot bran mash, grass, etc.) Give a heaping tablespoonful of granular sal nitre three times daily in bran mash and inject leucocytic extract once daily.

Salvador Stock Farm



Having just received a fresh importation of Shire Stallions, which I wish to close out this spring, I am offering them at reasonable prices.

Henry Wheatley
NAPA, CAL.

America's Leading Horse Importers

PERCHERONS



"Our recent importation arrived at our Oakland stables March 1st. This shipment comprises the best lot of stallions ever shipped to the Pacific Coast. Every horse in the lot is sound, young, stylish and of the best conformation. At the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons; two Second Prize ribbons, and other honors.

If you want the BEST let us hear from you."

McLaughlin Percheron Company
Kansas City, Mo. Oakland, California

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.

CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe. OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.

INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

OPPORTUNITY AWAITS YOU

The production of your herd can only be increased by the use of the right sire. Great and persistent production, combined with dairy type are all important factors in the selection of a herd bull. That these qualities are possessed by our herd has been amply proven by the official test and in the show ring. Herd bulls have been selected from the greatest producing families of the breed, two being from 28,000-pound cows, and the only two cows in the world that have exceeded 50,000 pounds of milk each in two years. Fifteen cows now have an average of over 700 pounds of fat and forty cows over 600 pounds, including many two, three and four-year-olds. A heifer with first calf has exceeded 600 pounds of fat and six others have exceeded 500 pounds.

Bull calves bred in the lines that have produced these cows are being offered at \$125 and \$150. Can you afford to use a bull from unknown or untested ancestors? Write us your wants, or come and see us.

A. W. MORRIS & SONS CORP.

Holstein-Friesian Cattle

Woodland, Cal.

THE HINMAN MILKING MACHINE

Is fast gaining favor. 2381 machines sold in 1913.

HINMAN
NATURAL HAND ACTION



The machine that is remarkable for its SIMPLICITY, RELIABILITY AND REASONABLE COST.

C. W. Ginn of Corcoran is milking 75 cows. Read what he says.

Corcoran, Jan. 7, 1914.

Mr. C. F. Daniells.

Dear Sir: I consider my Hinman investment one of the best I have ever made.

Yours truly,
C. W. GINN.

C. F. DANIELLS & SON, Modesto, Cal.

Agents for California and Oregon.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

REGISTERED JACKS

11 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

JAS. W. McCORD, Hanford, Cal.
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9 BULLS 9
REGISTERED SHORTHORNS
9 to 13 months old. In fine condition.

H. L. MURPHY
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PATENTS
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

Home-Made Poultry Wrinkles.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

The Useful Gunny Sack.

The warm weather will soon be here, in fact we have had a few days that indicated it had already arrived. If the small poultryman is to make anything, it must be by economizing in the appliances and little things he needs. If you have no natural shade, go to work early to make some. For the hens that are yarded, I find the cheapest and best shade is made by cutting open gunny sacks and pinning them along the wire. Use nails for pins making sure that each nail goes through the sacking and bites through the wire mesh.

Formerly I used string, but string rots with the sun, nails don't; besides, they look neater and are none the worse for other purposes when you take down the shade in the fall.

For small chicks have a low coop standing where the chicks mostly run and put feed and water under, for the top put one board lengthwise of the coop, two inch mesh wire over that and gunny sacking over all. There may be more useful as well as more ornamental things than gunny sacks on a poultry ranch, but I have not found them.

EGG LAYING CONTEST

LED ALL THE WAY

At the Napa Egg Laying Contest our pen finished second, 66 pens competing. In our own class, **White Leghorns**, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

BLOM & SON, Napa, Cal.



Free Book

giving a full account of hatching, raising, and caring for chickens,

with details of a Complete System of Feeding.

Will be sent to you on application

COULSON CO.
Box E Petaluma, Cal.

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MEAT MEAL FOR POULTRY

WE GUARANTEE

- 1—Better egg results than from any brand of "beef scraps."
- 2—Positively no fish flavor in eggs or meat of birds fed on it.
- 3—None of the digestive troubles that many "beef scraps" cause.
- 4—Lower mortality among hens fed to force a high egg production.
- 5—Baby chicks thrive on it; they don't die, as they often do on "beef scraps."

Petaluma

Reports Wonderful Results

"PACIFIC PIONEER"
(Registered Trade Mark.)

Write for sample and feeding test reports.

WESTERN TALLOW COMPANY
38 Beale Street, San Francisco, Cal.

Anything green, the chickens destroy; and where there are no trees the poultryman is "up against it", until he spies the ever useful gunny sack. Those that come filled with alfalfa meal are the best, being open and clean and also of good size.

How to Make an Oat Sprouter.

For labor saving in this climate I prefer to sprout my oats in gunny sacks, it is so simple and easy, just soak the quantity of oats in a sack by putting them in a tub of water, 24 hours in cold weather, 12 in warm weather, then lift out of water and lay in a heap until the sprouts commence to grow, spread the length of the sack over the contents and sprinkle every day until used. But it is not so warm all over the State as right here, and for those who want a cheap handy oat sprouter, any tinner can make the trays of galvanized iron for about 20 cents each. Have him perforate each tray so that the surplus water can run away. Set them one above the other in a frame made by nailing cleats on the inner sides of two upright boards fastened far enough apart to allow the trays to slide in and out easily.

Soak the oats as usual and spread in the trays, then once or twice a day sprinkle the top tray with warm water, this will leak through to the others. If you want them for green and grain foods, the sprouts should not be over one inch long, but if they are to take the place of green feed only, let them grow as long as you like, they will always be green and tender, which is more than can be said for some green feed that is given chickens and causes impacted crop.

It Pays to Organize.

Sonoma county poultrymen are organizing under the name, Sonoma County Poultry Producers' Federation. The members are in districts and have their own officers and meetings.

At this time there are seven stations receiving eggs, federation eggs and they are still organizing. The membership fee is but \$5, and as it can be paid in monthly installments of \$1 each, it ought to be easy for every one interested to join. Twenty-one cents is the minimum price, but down here where we are not organized they are paying but 18 cents. Moral: Pays to organize.

What "Hoganizing" Means.

One of our readers writes that he has looked in several books and papers without finding any reference to Hoganizing.

This is a word that has been coined, if I may so put it, as we are in a habit of coining or making words to suit. It simply means or represents a system invented by Walter Hogan of Petaluma, for testing the laying ability of hens, and also the ability of the male bird to transmit his own good or bad qualities to his progeny. This ability of a male bird is usually called prepotency. In the human family we have phrenologists who can tell pretty well, what each one is adapted to do and whether they have the parental instincts that ought to be present in all who undertake to raise a family.

Now Hoganizing poultry is something like phrenology, it tells the expert handler what to expect from the hens he feeds, and the males in family

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

IN SPITE OF ADVERTISING "BABY chicks all sold" we have received many inquiries for chicks and have now installed another incubator room, which brings our total hatching capacity to over 5,000 eggs at one time. To introduce our stock in as many localities as possible, we have made the following special prices for the balance of the season. White Leghorns—Eggs \$1.50 per 15, \$2.50 per 30, \$6.00 per 100, \$50.00 per 1000; chicks, \$7.00 per 50, \$13.00 per 100, \$125.00 per 1000. Cockerels, \$2.50 each; no females for sale. White Plymouth Rocks—Eggs \$2.00 per 15, \$4.00 per 30, \$8.00 per 100. Chicks, \$11.00 per 50, \$20.00 per 100. Cockerels \$3.00 each, pullets \$2.50. Address Dept. 2, Newton Poultry Farm, Los Gatos, Cal.

ORDERS TAKEN for day-old chicks and eggs for hatching from the following breeds: White Leghorns, Buff Orpingtons, White Wyandottes, Rhode Island Reds, Black Minorcas, Barred Plymouth Rocks and Light Brahmas. All good laying stock. Eggs \$1.50 per 15. White Leghorn day-old chicks \$10 per hundred, and all other breeds \$15 per hundred. For further information address Mrs. I. H. Tuttle, Box 473, Watsonville, Cal.

BABY CHICKS—34,000 hatching capacity; orders taken now for White Leghorns, Black Minorcas, Rhode Island Reds, to be shipped from 16th to 18th of April and 19th to 26th of April. All choice quality. Stock can not be excelled. Western Hatchery, Petaluma, Cal. References, Petaluma Nat'l Bank

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities \$3.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande San Luis Obispo County, Cal.

OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for April and May, \$9; reduction in quantities. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

BUFF, BROWN, WHITE LEGHORN CHICKS—Extra good stock, \$10 per 100; also stock for sale. Exhibition Black Minorca eggs, \$3.75 per 15. James D. Yates, Expert Poultry Judge, Modesto.

S. C. WHITE LEGHORNS—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected hens, bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

RHODE ISLAND REDS exclusively; exhibition and utility; hatching eggs from trap-nested heavy winter layers, \$2 per 15 and up; baby chicks, April 12, \$2.40 per dozen; stock for sale. Wm. Larm, 746 Lincoln Ave., Alameda.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

FREE—66-page catalogue, describes in detail prices, etc., on 19 kinds of baby chicks, hatching eggs, incubators, brooders, etc. We ship everywhere. The Pioneer Hatchery Co., 112 E. 8th St., Los Angeles, Cal.

EGGS FOR HATCHING—Pure-bred stock; Buff Orpington, Toulouse geese, Pekin duck, Buff Cochins bantams, Pearl guineas and pheasants. L. R. McCoy, R. F. D. No. 1, Box 205, Stockton.

ORPINGTON BREEDERS ATTENTION. After April 1st I will sell eggs from all yards at \$2.50 a setting, both Buff and White. Mrs. S. Swaysgood, R. 2, Pomona, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

ORDER MAMMOTH BRONZE TURKEY eggs from largest turkey ranch in Stanislaus county; \$3 per setting. Address Crows Landing Turkey Ranch, Box 227, Crows Landing.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

BABY CHICKS AND HATCHING EGGS—Beautiful White Orpingtons; also the popular new breed, Buff Minorcas. All thoroughbred, Hoganized stock. Mrs. C. A. Sanford, Mountain View, Cal.

FOR SALE—White Plymouth Rock eggs for hatching. Selected stock. U. S. Fishel strain. \$2 per setting. Special prices on large orders. Mrs. J. E. Tupper, Ceres, Cal.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

INCUBATOR CHICKS—White Rock, Black Minorca, White, Brown and Buff Leghorns. All high-class stock. Send for booklet of prices. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

EGGS—Buff Orpingtons, setting \$1.00. Runner ducks, 75c. Baby chicks and ducklings. Glendale, Fleming Ave., San Jose, Cal.

PURE-BRED WHITE ROCKS and White Leghorns. Fancy and utility. Stock, eggs and chicks for sale. Pleasant View Farm, Pleasanton, Cal.

WHITE HOLLAND TURKEYS—Prize-winners San Jose, 1913. Stock and eggs for sale. R. H. Brotherton, Los Altos, Cal.

WOODHAVEN FARM BUFF ORPINGTONS—Bred for size and winter laying. Choice stock and eggs for sale. Mrs. C. M. Smythe, R. 3, Stockton.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

MAMMOTH BRONZE TURKEY EGGS from the largest and best stock in the West. Special prices. Geo. A. Smith, Corcoran, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 373 Bandini Ave., Riverside, Cal.

BARRED ROCKS ONLY—Am booking orders for eggs and chicks for March delivery. Send for folder. G. L. Hawley, Madera, Cal.

CHINESE AND SILVER PHEASANT EGGS; also Pearl Guinea eggs. E. W. Leffler, R. 1, Box 193, Stockton, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties. L. W. Clark, Petaluma.

PETALUMA BROODER STOVE, Haywards, Cal. Best on market. Latest improvements. Catalogue free.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

American Steel Fence Posts

Cheaper Than Wood and More Durable



Quality—High-class steel, heavily zinc coated inside and outside.

Strength—Strong enough to hold up any wire fence and furnish all necessary resistance.

Adaptability—Adapted to all conditions and will prove absolutely satisfactory wherever a good wire fence is desired.

Service—Give much more and much better service than can be expected of wood posts, and will not burn, rot or decay.

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Adapted to All Wire Fences. Increase the life of a fence. Put a wire fence on permanent American Steel Posts and preserve the fence indefinitely; put it on wooden posts and it is like building a brick house on a wooden foundation.

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affairs. It is a fact that some very good looking male birds are not able to transmit their own good qualities to

their offspring, in spite of the theory that "like begets like."

Like may beget like, so far as color and dominant traits go that have been bred into the breed to make it a breed; but the individual qualities of each separate bird, will never be transmitted unless the parent bird has the ability to dominate the offspring. This is properly speaking, prepotency; and in the female there are certain signs that tell us pretty closely how many eggs she will lay and what sort of a mother she will make. Several systems are being sold to poultrymen all over the United States that claim to teach these things, but I have never investigated any of them except the Hogan system.

Telephone Stops Chicken Steal.

For the last three months chicken thieves have been terrorizing this and other communities between Los Angeles and Redlands, San Bernardino and Pomona. There has probably been several thousand chickens stolen, as the thieves conducted business in a wholesale manner with two autos. But they are caught at last and everybody, even yours truly sleeps just a little sounder for the knowledge that they are behind the bars. Three men, two autos, and about 200 chickens was a fairly good catch for two officers who were watching the roads for them and ran them down in an auto. The telephone makes it hard for the transgressor to escape very long, two calls from people whose hen roosts had been visited that night gave the Pomona officers the clue which led to the arrest.

Byce For A. P. A. President.

The Eastern poultry journals are tooting the horn for Lyman C. Byce; I think the idea is to make him president of the A. P. A. for 1915. Am not quite sure that the horn tooting means that, but it is something of the kind; and my, but they are fairly daubing the paint on! Everybody knows Mr. Byce, who by the way, is a very modest man—he will hardly know himself in this eastern dress—but I guess he will have to wear it if the powers that be say so. Here is a sample of the highly colored stuff they are handing out about one of the most unassuming men on this coast.

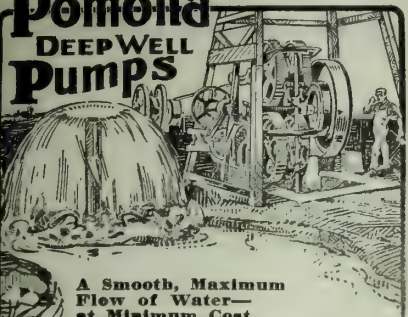
"What particularly interests us is that Lyman C. Byce has been the mainstay, the mast, and the sail of the Fancy on the Coast since the whangdoodle mourned for its first-born. Who but he could have proven to any mother-minded hen that she was wasting her time trying to incubate, when Byce was around with a Petaluma. Answer me that?" Miller Purvis has been appointed to write Mr. Byce's history.

HORN FLY WORKS ON THE HIDE.

To the Editor: Can you give me any information as to the time that the horn fly was first brought to California and how to keep the flies from cattle.—W. W. B., Davis.

[The horn fly was imported to America from Europe about 1887. Spraying the cattle with anti-fly remedies is good; or brushing the surface of the hair with a mixture as follows: Cut some pine tar with an equal amount of kerosene and then add as much fish oil as of the kerosene. They breed in fresh manure. Spread the manure out so it will dry quickly or keep it under close cover.—EDITOR.]

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DEEP WELL
Pumps



A Smooth, Maximum Flow of Water—
at Minimum Cost.
No Jerk, Jar or Vibration.

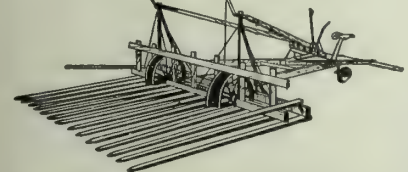
We make a specialty of building Pumps for raising water from deep wells for farm or irrigation purposes.

Write for Pump Catalog No. 54 P and tell us about your pumping Problems.

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We also make a full line of Gates and Valves for cement pipe irrigation.

Victor
Buck Rakes



One of the hardest tools for a California rancher to get is a satisfactory Buck rake. Eastern made rakes do not meet Pacific Coast conditions. The Victor is especially adapted to Pacific Coast conditions. Has extra long teeth, extra wide high wheels and strong frame. Easy to work. Leverage perfect with heaviest load.

Send for Literature

The H. C. Shaw Company
Manufacturers
56 N. California St., Stockton, Cal.

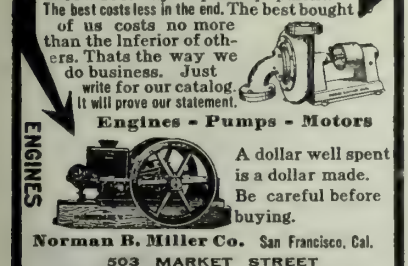
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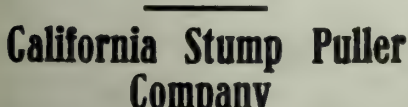
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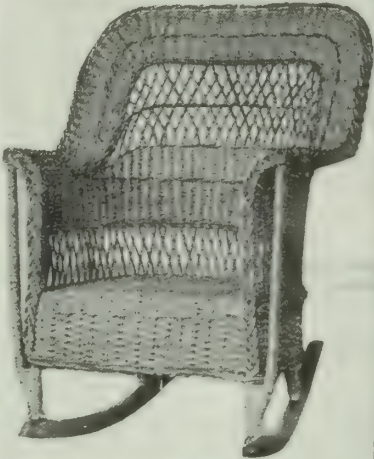
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Slip \$1.00 in an envelope to-day, mail it to us, stating whether you wish to pay the balance in weekly or monthly installments, and we will ship the chair, freight prepaid, the day we receive your order.

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The Home Circle.

Vegetable Recipes.

Vegetables contain mineral salts which are good for the blood and bones. These minerals lie close to the outside, so vegetables should be pared thinly.

Peas, beans and lentils contain a muscle building principle and nearly all vegetables contain starch, and many sugar.

As a general rule, underground vegetables should be cooked in unsalted water, covered, and green vegetables in salted water, in an uncovered saucepan.

SPINACH.—Remove roots and wilted leaves. Wash in several waters. Add no water when cooking, but keep kettle covered to hold steam. Chop spinach with silver knife or put through meat grinder before serving. Season with butter, pepper and salt or with a white sauce. Garnish with hard boiled egg cut in rings.

BOILED ARTICHOKE.—Cut off stem close to leaves. Remove outside bottom leaves. Cut off 1 inch from top of leaves. Soak ½ hour in cold salted water. Drain and cook from 40 to 45 minutes in boiling water salted and acidulated with a spoonful of vinegar. Remove from water, place upside down to drain. Serve hot with drawn butter sauce or cold with mayonnaise.

BOILED ASPARAGUS.—Cut off lower parts of stalk. Wash carefully, remove scales and tie in bunches. Cook in boiling salted water 15 minutes or until soft, leaving tips out of water first 10 minutes. Drain, remove string and spread with melted butter, salt and pepper.

RHUBARB SAUCE.—Two cups rhubarb, peeled and cut into 1-inch pieces. One cup sugar. Cook rhubarb with enough water to keep it from burning. When soft, add sugar and remove from the fire. Rhubarb may be cooked in a double boiler without adding water, or it may be baked with the sugar.

Patriot, Martyr, and Coward.

A witty judge of the Municipal Court of Boston stoutly declared that "a patriot was a man who refused to button his wife's lingerie waist." "A martyr," he went on, "is one who attempts and fails, while a hero tries and succeeds."

"Then what is a coward?" asked a curious bystander.

"Oh, a coward," replied the judge, "is a man who remains single so he won't have to try."—Argonaut.

A Case of Commission.

Algy's Mother—I suppose yer gittin' a good fee, sir, fer attendin' to the rich Smith boy?

Doctor—Well, yes, I get a pretty good fee. But why are you asking?

Algy's Mother—Well, I 'ope yer won't forget that my little boy, Algy, threw the brick that 'it 'im!—London Opinion.

Trouble for Pa.

"Ma," inquired Bobby, "hasn't pa a queer idea of heaven?"

"Why do you ask that?"

"'Cause I heard him tell Mr. Naylor that the week you spent at the seashore seemed like heaven to him."—Boston Transcript.

Tommy's Aunt: "Won't you have another piece of pie, Tommy?" Tommy

(sighing): "No'm, thank you." Tommy's Aunt: "You seem to be suffering from loss of appetite, young man. Are

you ill?" Tommy (sighing again): "No'm. What I'm sufferin' from is politeness."—Harper's Monthly.

The Taste Tells

Ghirardelli's "hermetically sealed" Ground Chocolate retains its rich, full flavor, a little goes a long way. Bulk chocolate loses its strength and flavor, absorbs dirt and germs. Which kind will you have?

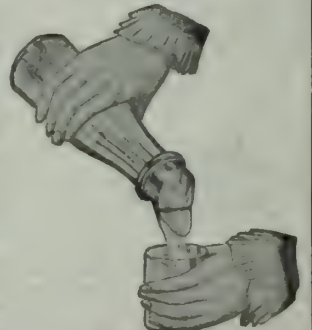
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Sterile Automatic Milk Bottle Stopper. The only practical milk bottle stopper on the market. Opens automatically and closes as bottle is turned upright. Made of polished aluminum with pure rubber base. Fits any standard milk bottle. Protects milk from flies, dust and ice-box odors. Every housewife who has used it is delighted. Sample prepaid, 25c. Write for full particulars.



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Normal, Bookkeeping, Shorthand Penmanship.

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Write for catalogue.

Our Young Folks

Little Wait-a-Minute.

Once upon a time there was a little girl named Bessie whom everybody loved. Her father loved her; her mother loved her; her brothers and sisters loved her; and her uncles and aunts and little friends all loved her.

But there was something that she used to do that nobody liked. Her father didn't like it; her mother didn't like it; her brothers and sisters didn't like it; and her uncles and aunts and little friends did not like it either, and it was this.

When father came home tired from his work, he would often say, "Bessie, will you run upstairs for my slippers?" And Bessie would answer, "Yes, father, I will, but—just wait a minute till I finish putting dolly to bed," or something like that.

And sometimes, when mother would call from the door, "Bessie, come in, dear, I want you to help me a little," and Bessie would answer, "Yes, mother, but—just wait a minute, I do so want to finish my little garden."

And, when her little friends would call to her, "Bessie, Bessie, come out to play," even then she would so often answer, "Just wait a minute," that by and by every one began to call her "Wait-a-minute" and nearly forgot that her real name was Bessie.

One evening father came home late, and Wait-a-minute ran to meet him. He kissed her, and put his hand way down deep into his pocket, and brought out two pink tickets.

"Oh, father, father," said Wait-a-minute, jumping up and down, "are those circus tickets?"

"Yes," said her father, "they are; and, if you are ready next Saturday at one o'clock when I come home, we will go to the circus." And he told her about the dancing bears, and the funny clowns, and the wonderful ladies who jump through paper hoops while riding on horseback, standing up; and about the great tall giant, and little wee dwarf and the very thin man, and the very fat woman, till Wait-a-minute said, "I'll be ready, father, I'll be ready, at one o'clock on Saturday."

So Sunday passed, and Monday passed, and Tuesday passed, and Wednesday passed, and Thursday passed, and Friday passed, and Saturday came, and Wait-a-minute woke up early.

"O mother," she called, "isn't this the day we go to the circus?" And her mother said, "Yes, dear, if you're ready at one o'clock."

"Oh, I will be ready," said Wait-a-minute, and she got up and dressed herself and had her breakfast.

After that she went upstairs to play with her dolls. The dolls' house looked so untidy that she said to herself, "I really can't leave it like this."

Nine o'clock passed, and ten o'clock passed, and eleven o'clock passed, and twelve o'clock came, and her mother called upstairs, "Bessie, Bessie, it's time to get ready." But Bessie answered, "Oh, just wait a minute, mother: I'm in the thickness of tidying my dolls' house."

Minutes passed, and more minutes passed, and still more minutes passed, and Bessie did not come. Her mother went on getting a nice little lunch ready for her, and put it on the table. There was a glass of creamy milk, a nice fresh egg, and brown baked apple for dessert. She was just saying to herself, "Wait-a-minute will be late,"

when she heard her coming down the stairs.

stairs.

There was not much time left, so Wait-a-minute had to hurry over her lunch, hardly tasting it. Then she ran upstairs with her mother. Her face and hands were washed, and her mother was brushing her hair and saying, "You must wear your little new shoes," when the bell rang, and—there was father!

"Where's Wait-a-minute? Isn't she ready?" and just then the town clock struck one.

"O, Wait-a-minute, I shall have to take Harry who lives across the street. He is all ready to go. I saw him when I passed by," and he went out and shut the door.

Then Wait-a-minute ran to her own little room, and threw herself on her bed, and cried and cried till the pillow was wet with her tears. At last she could cry no more, and then she fell asleep.

By this time father and Harry were at the circus. They saw the dancing bears and the funny clowns, the hoop lady, the little wee dwarf and the great big giant, the very thin man, and the very fat woman; but all the time father was wishing that Wait-a-minute might have been there, too.

When he came home, mother was sewing by the lap, all alone. "Where is Wait-a-minute?" said father. "Fast asleep on her own bed," said mother, quietly: "She cried herself to sleep and has never waked up."

So the father went upstairs softly, and he found Wait-a-minute asleep on the pillow. He stooped down, and kissed her so quietly that she didn't wake up. Then he went downstairs and had supper.

By and by Wait-a-minute woke up and it was dark. At first she was puzzled, then she remembered all about it, and a little sob came to her throat. But she slid from the bed, and stole quietly down into the lighted room.

When she saw her father, she threw her arms around his neck, and pressed her cheek against his, whispering, "I'm so sorry, father, I was not ready!" And he gave her a big hug, and said, "Maybe, little one, we can try again."

The days passed by, and circuses came and circuses went, but father did not say anything. At last one evening he came home later than usual, and Wait-a-minute ran to meet him; and what do you think he put in her hands but two blue tickets!

"Oh, father, father, are they circus tickets?"

"Yes," said her father, "for next Saturday, if you are ready in time."

"Oh, I'll try to be ready," said Bessie.

Sunday passed, and Monday passed, and Tuesday passed, and Wednesday passed, and Thursday passed, and Friday passed, and Saturday came; and when Wait-a-minute woke up, the sun was shining brightly.

"Oh, mother, mother," she called, "isn't this the day we go to the circus?"

"Yes," said her mother, "if you are ready in time."

"Oh, I'll try to be ready," said Wait-a-minute, jumping out of bed, and beginning to dress herself.

After breakfast, she ran upstairs to her playroom. The dolls' house was so untidy that she really must make it right. So she took out all the furniture, and shook the little rugs and carpets.

Nine o'clock passed, and ten o'clock passed, and eleven o'clock passed, and twelve o'clock came.

"Bessie, Bessie, it's time to get ready," called her mother.

"I'll come just now, mother," said Bessie; and she ran downstairs, and there was the nicest little lunch spread out on the table.

"It was so good, mother," she said, as she finished.

"Then come, dear, and get ready," said mother, and Bessie ran upstairs.

Hands and face were soon washed, and her hair brushed. "Run and get your best little shoes," said her mother. They were put on, and then her pretty little blue dress and blue velvet coat and her hat, and she was just fastening the last button of her little brown gloves when the bell rang, and there stood father.

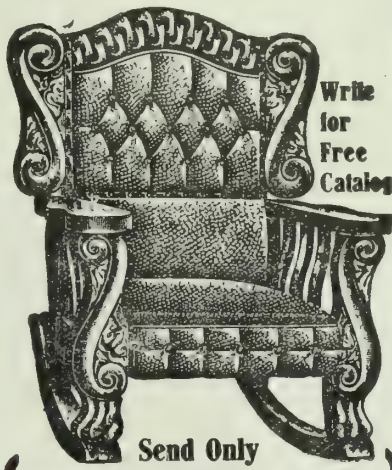
"Well, is Wait-a-minute— Oh, there you are, dear! Come along." She turned to kiss her mother good-bye, and the town clock struck one.

"Just in time," said her father, as they went down the steps. "Do you know, Wait-a-minute, I'm give you a new name, because you were ready today. Can you guess what it is?"

Wait-a-minute thought; then she said, "No, father, but I don't like Wait-a-minute. What is the new name?"

"Be-on-Time," said her father gently, "my dear little Be-on-Time."

"O father, I like that name," said



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HOME UNION

51 MARKET STREET

SAN JOSE, CAL.

Bessie, and she squeezed his hand hard. "I hope I can keep it."

And she did.



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You save time and money by using "Bishopric Wall Board" on walls and ceiling. Far better than plaster or wood walls. Stays strong and rigid. Is damp and vermin proof.

The wall board comes in sheets ready to nail to studding or over old walls. Goes on dry. No tools but saw and hammer needed. Makes a smooth, sanitary wall ready for paper or other decoration.

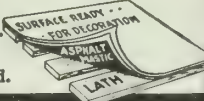
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SAN FRANCISCO, OAKLAND,
ANTIOCH & EASTERN RY.

THE MARKETS

San Francisco, April 8, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Spot wheat is very firmly held in the North, and as there are no very large supplies in the local market there is a decidedly firm feeling in all lines. Trading is not especially active, but some holders are asking another advance, with indications that the higher prices will be paid before long. Prospects for the coming crop are good all over the country.

California Club, ctl.	\$1.62½ @ 1.65
Forty-fold	1.65 @ 1.67½
Northern Club	1.62½ @ 1.65
Northern Bluestem	1.75 @ 1.77½
Northern Red	1.62½ @ 1.70

BARLEY.

The excellent crop outlook keeps the future barley market in a very easy condition, and while spot offerings are not very large, the market feels some effect of the crop prospects. There is little demand, and as sellers are getting anxious for business, the prices have again been marked down.

Brewing and Shipping	Nominal
Choice Feed, per ctl.	\$1.10 @ 1.12½
Common Feed	1.07½ @ 1.10

OATS.

There has been a little more movement in the last day or so, but on the whole business is quiet. Prices remain fairly steady at the former level.

Red Feed	\$1.50 @ 1.60
Gray	Nominal
White	1.25 @ 1.30
Black Seed	Nominal

CORN.

There has been very little Eastern corn coming in lately, and the spot market shows more firmness, though prices have not been notably advanced. There is little, if any, California corn moving in the local market.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @ 1.82½
Eastern White	Nominal
Egyptian	1.75 @ 1.85
Milo Maize	1.75 @ 1.80

RYE.

There is no demand worth mentioning for this grain at present, and values on ordinary offerings are unchanged.

Rye, per ctl.	\$1.45 @ 1.50
---------------	---------------

BEANS.

The bean situation shows no particular change from the conditions which have prevailed for the last few weeks. The market remains extremely strong, with numerous urgent inquiries from various quarters, though the movement is limited somewhat by lack of supplies. Offerings of most varieties are getting into very narrow compass for this time of year, and the upward movement of prices has not been checked. Blackeyes and Mexican reds are now up to \$6, and pinks show another slight advance, while horse beans and pea beans are showing the effect of the general upward movement.

(On wharf.)

Bayos, per ctl.	\$6.20 @ 6.50
Blackeyes	5.75 @ 6.00
Cranberry Beans	4.50 @ 5.00
Horse Beans	2.15 @ 2.25
Small Whites	5.50 @ 5.75
Large Whites	3.75 @ 4.00
Limas	6.75 @ 7.00
Pea	4.25 @ 4.50
Pink	4.00 @ 4.20
Red Kidneys	6.00 @ 6.25
Mexican Red	6.00

SEEDS.

There is no activity worth mentioning in this market at present, and prices on all lines stand at the former level.

Alfalfa	12½ @ 15 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb.	3½ c
Canary	7 @ 7½ c
Hemp	2½ @ 3 c
Millet	2½ @ 2½ c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

No further change has been made in the local figures, but northern export grades show the expected advance, and the market shows an all-round firmness.

Cal. Family Extras	\$5.80 @ 6.20
Bakers' Extras	4.80 @ 5.40
Superfine	3.90 @ 4.20

Hay and Feedstuffs.

HAY.

The market shows little feature worthy of comment at present, general conditions remaining about the same as for some weeks past. Arrivals continue rather light, but the local trade cannot be persuaded to buy any thing except what is needed for the present. With the prevailing dullness in general mercantile trade, requirements do not appear to be as heavy as usual, and it is not easy to clean up the weekly arrivals. Prices remain practically as before, but the returns on consigned hay, of which there is more or less coming in all the time, are irregular and uncertain. Dealers are buying practically nothing. Alfalfa showed a little more strength a few days ago, but receives little attention locally, as green feed is abundant.

No. 1 Wheat, or Wheat and Oats	\$13.50 @ 14.50
do No. 2	11.00 @ 13.00
Lower grades	9.00 @ 11.00
Tame Oats	10.00 @ 13.00
Wild Oats	9.00 @ 11.50
Alfalfa	8.00 @ 11.00
Stock Hay	7.00 @ 9.00
Straw, per bale	65 @ 90c

FEEDSTUFFS.

Values on all lines remain the same as last week. The demand for practically all lines is light, as green feed is abundant in the country, and there is less need for prepared goods than usual.

Alfalfa Meal, per ton	\$18.00 @ 19.00
Bran, per ton	25.50 @ 26.50
Oilcake Meal	34.00 @ 35.00
Cocoanut Cake or Meal	26.00 @ 27.00
Cracked Corn	41.00 @ 42.00
Middlings	33.00 @ 34.00
Rollod Barley	25.00 @ 26.00
Rollod Oats	29.50 @ 30.50
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

Few changes are noted this week. Asparagus is now coming in in much larger quantities than at any previous time this season, and is somewhat lower. The demand, however, is extremely heavy, and values have held up comparatively well. With canners in the market, no difficulty is found in cleaning up all arrivals. Offerings of peas are rather excessive, and the market is inclined to drag, only a few offerings bringing the top quotation. Celery also is easy, with a limited demand, and lettuce has fallen below last week's prices, as there is little attractive stock offered at the moment. Green peppers are higher.

Cabbage, per ctl.	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.	7 @ 12½
Carrots, per sack	35 @ 50c
Green Peas, lb.	3 @ 5c
Tomatoes, Mexican, box	2.00 @ 2.75
Sprouts, lb.	4 @ 6c
Celery, large, crate	1.50 @ 2.25
Rhubarb, box	75c @ 1.50
Lettuce, crate	75c @ 1.25
Mushrooms, lb.	5 @ 10c
Asparagus, box	90c @ 1.75

POTATOES, ONIONS, ETC.

Old potatoes are still easy, with a slight decline in local stock. New potatoes, however, remain quite firm, and it is reported that the new crop has been set back a little by frost. Sweet potatoes show a further advance. A few Oregon onions are offered at about \$5, Australian and Bermuda stock standing as before. Garlic is scarce and is held at extreme prices.

Potatoes:	
River Whites	75 @ 85c
Sweet Potatoes, per ctl.	2.10 @ 2.25
Oregon Burbanks	75c @ \$1.15
Onions: Australian	4.75 @ 5.00
Bermuda, crate	2.00 @ 2.50
Garlic, per lb.	25 @ 30c
New Potatoes, lb.	4 @ 5c

Dairy Produce.

POULTRY.

Arrivals are a little larger than last week, and the week opened slightly easier, but the market is now described as firm at the old prices. There is a very good demand, and all offerings have so far cleaned up without difficulty.

Large Broilers	25 @ 30 c
Small Broilers, per lb.	30 @ 35 c
Fryers, per lb.	24 @ 26 c
Hens, extra, per lb.	19 @ 20 c
Hens, large, per lb.	19 @ 20 c
Small Hens, per lb.	19 @ 20 c
Young Roosters, per lb.	20 @ 21 c
Squabs, per doz.	\$2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb.	20 @ 21 c
do dressed, choice	23 @ 25 c

BUTTER.

Extras are ½c higher than a week ago, and it is expected that the market will hold firm for some time. Arrivals are fairly large, but the local demand is picking up, and there is some shipping business, which will tend to prevent any decline.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras	23 23 23½ 23 23½ 23½
Prime	
Firsts	22½ 22½ 22½ 22½ 23 23
Firsts	22½ 22½ 22½ 22½ 22½ 22½

EGGS.

Chinese eggs are now arriving in large quantities, and the quality is better than that of the first arrivals. Much of this stock is going into storage. None of it competes with the better grades of local stock, but doubtless replaces considerable Eastern. Local eggs have advanced considerably in the last week, due to the large Easter demand and the fact that prices at some outside markets are even higher. No weakening is expected, as the Eastern market is above the desired storage basis, and a heavy local demand is expected.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras	19½ 19½ 20 20½ 21½ 22
Firsts	19 19 19 20 21 21
Selected	
Pullets	18 18 18 19 20 20

CHEESE.

The only change this week is a slight advance in Y. A.'s. Monterey cheese remains weak and very plentiful, with prices as before.

Fancy California Flats, per lb.	15½ c
New Young Americas, fancy	18 c
Monterey Cheese	13 @ 14 c

Deciduous Fruits.

The principal feature of interest is the arrival of the first box of cherries in the local market. The fruit was of the Purple Guigne variety, and sold for \$25. It is doubtful whether this fruit will arrive in quotable quantities for two or three weeks, though the crop is maturing early. Strawberries are much more plentiful, and in only fair demand at the moment, while the Southern stock is not very attractive. Prices are accordingly much lower. Apples are moving slowly, and Newtowns are lower, as holders are getting anxious to clean up.

Strawberries:	
Southern, crate	50 @ 75c
Fresno	\$1.25 @ 2.00
Banner, chest	10.00 @ 13.00
Longworths, chest	12.00 @ 15.00
Apples: Newtown Pippins	1.25 @ 1.75
Oregon Spitzenbergs	1.40 @ 2.25
Oregon Ben Davis	1.65 @ 1.85

Dried Fruits.

As far as growers are concerned the market is nominal in most lines as there is practically nothing left in the country. Most quotations have been omitted, as definite figures would probably be misleading under present conditions. The fruit is worth just what one can get for it, which depends on how badly any packer may need it; and it looks as if most fruits would be badly needed before anything is available out of the new crop. Peaches may still be quoted at the old level as there are some fairly large lots left, and several buyers would pay the quoted figures. There are a few small scattered lots of apples, but not enough to base prices on; while apricots, figs, prunes, and pears are almost entirely cleaned up. Raisins are moving off gradually at the Association prices. It is too early to say much of futures, though one packer has contracted for a few prunes on a 4c basis. New crop values will probably be established in most lines within a few weeks. Spot peaches are firm, but there is no very large movement. The outlook for apricots is very uncertain at present, but in other lines large crops are expected. The New York Journal of Commerce says: "Advices coming from California producing sections are to the effect that the outlook for a bumper crop of apricots, owing to the profuse bloom in early March, is much less promising. The trade here does not seem to take much stock in these reports. Seasoned operators declare that after such an unprecedented blossoming of the trees a good deal of thinning would have to be done by orchardists even if only 50% of the bloom set. Nature they claim is doing this work for the cultivators, and they have no fear that the crop will not be a big one unless a freeze should occur within the next couple of weeks. Consequently, buyers at this end are in no hurry to cover their prospective requirements in 1914 crop goods. Spot apricots, especially in choice and extra choices are in very small compass, and the market here has a strong tone, though at the moment there seems to be little demand. Peaches remain quiet on the

STATEMENT

of the ownership, management, circulation, etc., required by the Act of August 24, 1912, of PACIFIC RURAL PRESS, published weekly at San Francisco, Cal., for April 1st, 1914: Name of Editor, E. J. Wickson, Berkeley, Cal. Manager, Frank Honeywell, Berkeley, Cal. Publisher, Pacific Rural Press Co., San Francisco.

Owners: (If a corporation, give its name and the names and addresses of stockholders holding 1 per cent or more of total amount of stock. If not a corporation, give names and addresses of individual owners.) Private company, not incorporated, owned by Frank Honeywell, Berkeley, Cal.

Known bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities (If there are none, so state.): None.

FRANK HONEYWELL, Manager. Sworn to and subscribed before me this 31st day of March, 1914.

C. B. SESSIONS, Notary Public in and for the City and County of San Francisco, State of California.

(My commission expires Mch. 26, 1917.)

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spot, and little demand for futures from the trade in this territory is noted. Coast operators are not trying to force sales of futures and adhere firmly to their quotations.

"Spot prunes are going out rather slowly at present, but as stocks are small and closely concentrated, the firm tone of the market is maintained. Futures also appear to be neglected by local buyers, but there is no disposition shown by Coast packers to shade prices on 1914 crop."

Evap. Apples, 1913 Nominal
Apricots, 1913 Nominal
Figs: White Nominal
 Black Nominal
 Calimyrna Nominal
Prunes, 4-size basis Nominal
Peaches 4 @ 4½c
Pears Nominal
Raisins (In sweatbox):
 Loose Muscatels 4
 Thompson Seedless 5 @ 5½c
 Seedless Sultanas 4¼ @ 4½c

Citrus Fruits.

Heavy shipments of oranges continue from California, though they are not quite so heavy as last month. The Eastern markets are said to be heavily stocked with oranges, but with lighter shipments from California and Florida about cleaned up of its early fruit, the latter part of the season

gives promise of good prices.

On the New York auction, Monday, April 6th, 49 cars of oranges were sold at prices averaging from \$1.70 up to \$3 per box. The other auction points of the East also showed little stronger markets with better prices than last week.

Lemons are slow, owing to heavy foreign supply. Prices for best California stock on cars here are from \$3 to \$2.25 per box.

On the Los Angeles auction last Monday, 8 cars of navels were sold at prices averaging from \$1.05 up to \$1.40 per box.

Up to April 6th there had been shipped from south of the Tehachapi 16,879 cars of oranges and 956 cars of lemons. Shipments from Tulare and Butte counties are about over till the valencias ripen.

Oranges and lemons are coming into the San Francisco market on about the same scale as for several weeks past. The demand on the whole is keeping up fairly well, though the movement is not very active at the moment. Values on all lines stand as last quoted.

Oranges: Navels\$ 1.00@ 2.25
 Pangerines, crate 75c@ 1.25
 Grapefruit, seedless 2.75@ 3.50
 Lemons 1.75@ 3.75
 Limes 5.50@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing in the way of almonds to be had around the country, and with very little offered in the local trade, values are nominal. The same is true of walnuts, current requirements in this market being met with Manchurian stock.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15½c
Languedoc	15½c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Some small lots of honey have been received here recently, and this on top of old supplies which have failed to find much demand has caused a decidedly easy feeling as to values.

Comb, white	14 @ 15 c
Amber	10 @ 12 c
Dark	9 @ 10 c
Extracted: White	7 @ 8 c
Amber	6½c
Off Grades	3½@ 5 c

BEESEX.

Supplies are coming out slowly, and as this market has been well cleaned up, the market is fairly strong at the recent advance.

HOPS.

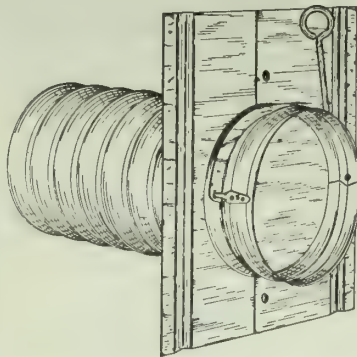
Little has been done in the old crop lately, the remaining supply being very light, but more interest is shown in 1914 and succeeding crops. A good-sized contract was made recently at Santa Rosa at 15½c., and a 5-year contract for valley hops is reported at 14 and 13c.

1913 crop	15 @ 17½c
1914 crop	14 @ 16 c

Live Stock.

Values stand about as before. With a good outlook for feed on the ranges, stockmen show no anxiety to sell, and there has been quite a strong demand for feeders in various sections. Supplies, however, are ample for current needs, and larger offerings are expected before long.

Steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼ @ 6½c
No. 2	5¾ @ 6 c
Bulls and Stags	2½ @ 5 c
(Grass-fed cattle, ¼ @ ½c less.)	
Calves: Light	8½ @ 9 c
Medium	8 @ 8½c
Heavy	6½ @ 7½c
Hogs: Grain-fed, heavy	7 c
150 to 250 lbs.	8¾ @ 9 c
100 to 150 lbs.	8½ @ 8¾c
Prime Wethers	5½ @ 5¾c
Ewes	4½ @ 5 c
Yearling Lambs	6¼ @ 6¾c
Milk Lambs	7 @ 7½c



4-C
IRRIGATION
GATE

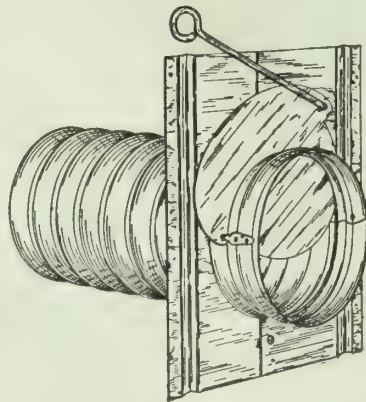
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DRESSED MEATS.

Steers	12 @ 12½c
Heifers	11½ @ 12 c
Veal, large	12 @ 13 c
Small	14½ @ 16 c
Mutton: Wethers	11 @ 11½c
Ewes	10 @ 10½c
Suckling Lambs	15 @ 16 c
Dressed Hogs	13½ @ 14 c

WOOL.

San Joaquin values stand about as before. There has been some business in the Northern clips, with sales within the range quoted, but so far the movement has been limited. More activity is expected, however, within the next week or so.

Spring Clips:	
San Joaquin	12@14c
Humboldt and Northern.....	15@19c

HIDES.

Values remain about as before, with limited offerings, though there has been no large demand of late.

Heavy Steers, over 56 lbs	15 c
Medium	14½c
Light Steers, under 48 lbs	14½c
Heavy Cows, over 50 lbs.	14½c
Light Cows, 30 to 50 lbs.	13½ @ 14½c
Kip	14½ @ 15½c
Veal	17½ @ 18½c
Calf	17½ @ 18½c

Dry—	
Dry Hides	25½ @ 26½c
Dry Kip, 10 to 15	24½ @ 25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c

HORSES.

Offerings of horses in the local market continue rather large, including stock sold in closing out various stables. There is a fair demand, and prices are accordingly inclined to easiness on all but exceptionally attractive stock. There have been few heavy drafters offered here lately, business running more to horses of medium weight, and a good many are sold for country use. Heavy drafters, 1700 lbs. and over\$275@325
Light Drafters, 1500 to 1650. 225@250
Chunks, 1350 to 1500..... 200@225
Wagon Horses, 1250 to 1350.. 150@200

Delivery Horses, 1050 to 1250 100@125
Desirable Farm Mares..... 75@100

MULES.

1200 lbs.	\$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

SIXTH EDITION EXHAUSTED.

The edition of "California Fruits and How to Grow Them" which was issued in June 1912 is now completely sold out. The demand for this book is steady, with a growing tendency. Professor Wickson is now at work revising the book for the seventh edition, which we expect to make handsomer than any of the previous editions. To those parties who are sending in orders for the book, we would suggest that they go to their book dealer and possibly he may have one in stock or can get one for you.

The third edition of "California Vegetables," by Prof. El. J. Wickson, is selling well and we can fill orders as fast as received.

The book "One Thousand Questions in California Agriculture Answered" is also selling well, and we have plenty of them in stock. A special rate is made on this book in connection with subscriptions to the Pacific Rural Press. On the other two books there is no variation in price of \$3 and \$2 per copy.

In the next issue, the PACIFIC RURAL PRESS will give detailed estimates of fruit and grain crop prospects. Of a necessity, at this time the estimates given cannot be taken for a "sure thing" on crops this season. While conditions look very promising at this time, yet there are several months before most crops will mature. Frosts, hot winds and other conditions may put an entirely different aspect on the season. The reports we will give can only tell what the conditions are now.

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and Disk Harrows
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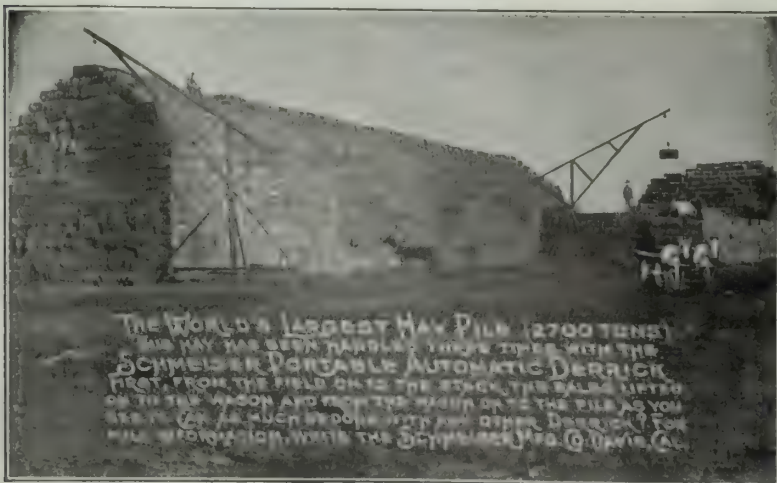
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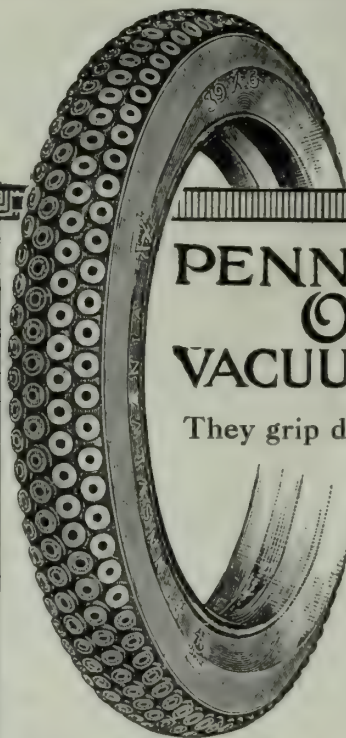
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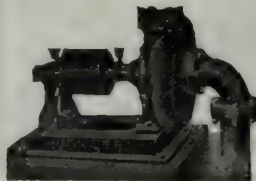
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Mention Rural Press.

THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 16.

SAN FRANCISCO, SATURDAY, APRIL 18, 1914.

Forty-Fourth Year.



TYPICAL DEMONSTRATION OF THE PROLIFICACY OF JAPANESE PLUM VARIETIES IN CALIFORNIA.

Kirkman Nurseries

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Orange—Lemon—Pomelo Trees

FRESNO CITRUS TREES are best acclimated for CENTRAL and NORTHERN California.

The superiority of our Citrus trees for hardiness north of Tehachapi HAS been fully demonstrated in hundreds of Citrus orchards throughout Tulare County, and along the Orange belt through the Sacramento Fair Oaks Section and Butte, Tehama, and Glenn Counties.

Some competitors attempt to convey the impression that we are subject to more or less injury from cold. On our new Citrus nursery plant at Avocado Station on the Santa Fe we have NO INJURY either to Citrus trees or to our Avocado orchard, which contains thirty different varieties of this new fruit.

We can still deliver absolutely first class stock in Eureka Lemon, Washington Navel and Valencia Orange and Marsh's Seedless Grape Fruit at reasonable prices.

OLIVES

We have propagated Mission Olives from the famous Misnewawa Mission trees and Manzanillos from adjacent sturdy bearing orchards.

Now is the time to plant Olive trees, and anyone who misses the opportunity to get a good Olive orchard started is neglecting to lay the corner stone to fortune. We believe in it to the extent that we are planting three hundred acres of them ourselves near our nursery plant at Borden in Madera County.

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Remember also that we have been at it more than a quarter century.

We are just closing our most successful season, thanks to you, our customers—Our Best Friends.

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Sizes from ½-inch up, and choice stand.

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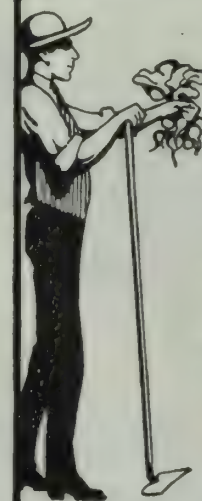
Each ton contains 280 lbs. of phosphorous, not rendered available artificially by high-priced destructive acids, but so finely ground as to become available in nature's own way.

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Small Vegetable Garden—50 cts. Prepaid

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Contains 43 packets, worth over \$4.00

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Express prepaid. Contains 53 packets

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THE PACIFIC RURAL PRESS

Present State Crop Conditions.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

All crops all over the State advanced exceptionally on account of the warm March weather. Late in that month a general rain spread over the State, having been preceded in north central coast counties by a light frost. The cloudy weather checked development of fruits considerably, but growing hay and grain are not suffering. Absence of sunshine has delayed the dropping of such fruit as may have been frosted, or unpollinized because of the hastening effect of the hot, dry weather or the cloudiness which prevented insects from working on the later blossoms.

It is yet too early to be fairly sure of most of the fruit still remaining on the trees—warm weather would quickly show in most cases.

This report is made largely from reports of county horticultural commissioners and of our own staff who have visited various parts of the State. All wish to emphasize the fact that present indications are mostly for an exceptional crop, but that many conditions may arise within a few weeks to greatly change the outlook. We are aiming to consider the amount of each crop grown in a district in relation to its percentage of the normal crop to get a fair estimate for the entire State.

Cereals.—All cereals show extraordinary promise on account of the heavy winter precipitation, the month of bright weather, and the widespread light rains of the past two or three weeks. Land fallowed last year on account of dryness was seeded this year, and the acreage is greatly increased in all sections.

The barley crop will be the largest ever, predicted at 800,000 tons as against 315,000 in 1913. The southern crop is already headed out and harvesting will begin by May 15.

Rice acreage is greatly increased in the Sacramento valley on account of reclamation projects and decreased sugar beet acreage.

Oats, corn, and wheat promise good yields unless too much rain brings on the rust. Most of the grain will be allowed to seed because the hay crop is heavy and early everywhere. Northwestern wheat is expected to break records.

Alfalfa seed enough to sow 100,000 acres at least has been sold

the past season in California, much of which is now going into the land.

Vegetables.—New potatoes are coming from the River district. The bean acreage is likely to be greatly increased, especially in the Sacramento valley. North of Los Angeles there are 278,500 bags of limas now on hand, according to Barnard and Bunker.

Fruits.—Citrus fruit blooms are showing up well, but oranges are not far enough along to judge. Reports from Southern California are very good for oranges and olives, less so for lemons.

Deciduous fruits are generally good, some of them exceedingly so.

Prunes are yet doubtful, the number that are safe in Sonoma, Napa, and Santa Clara counties would make a very light crop, while if a large proportion of those yet green and sticking should begin to grow when warm weather comes, their increased size would make one of the biggest prune crops we have ever had. Santa Clara reports are not yet in and will be mentioned in another place.

Apples are heavily blooming, and with no frost will mature a specially good crop. Gravensteins in Sonoma are blooming unevenly, which will hurt codling moth spraying efficiency. But it often happens that calyx spraying in the Watsonville district is delayed till the first of May with slight loss.

The Almond Growers' Association has sold all it dares, subject to future prices. Drakes are set heavily, but the hatch varieties are dropping considerably.

Apricots will be fairly good in spite of heavy losses in the northern and

central districts, mostly on account of the unseasonably hot weather in blooming time.

Cherries are rapidly showing up more of the safe sizes, and present indications are improving. Shipments will begin in a few days.

Figs are reported heavy in all large producing sections.

The biggest estimates of all are for peaches, indicating one of the biggest crops ever known. However, it is well to hold them until later before contracting.

Plums have been hurt in many sections so that their percentage will probably be lower than that of prunes.

All varieties of grapes promise well. Though in parts of Sonoma and Napa counties they were badly frosted, the growers are hoping that dormant buds will grow a crop. Fresno county reports prospects for a full crop of table grapes.



Alfalfa in the San Joaquin Valley.



Wheat in the Sacramento Valley.

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

TWO DOLLARS PER YEAR IN ADVANCE

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PACIFIC RURAL PRESS CO., - PUBLISHERS

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Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Apr. 11, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.39	33.73	40.70	70	42
Red Bluff	1.56	32.37	22.35	76	44
Sacramento	.18	19.32	17.97	74	48
S. Francisco	.48	28.90	20.53	72	52
San Jose	.24	18.96	15.43	78	44
Fresno	.04	10.70	8.47	80	46
Independence	.00	11.44	8.39	80	36
San L. Obispo	.10	30.92	18.47	82	52
Los Angeles	.00	22.81	14.69	84	54
San Diego	.00	9.02	9.20	76	54

The Week.

On other pages of this issue there are many facts and figures presented in the effort to forecast the season's amplitude for the encouragement and guidance of those who have products to make and distribute for the national comfort and progress. Of course, so early in the season and with everything measurably subject to the vicissitudes of earth and sky and to invasion by devouring hosts, which exist to try men's souls, the reader must be wise to read all forecasts with an understanding of perils yet to be passed. This effort becomes more intelligent and fruitful if based upon a good understanding of things as they now are and that is the service which our staff and many contributors endeavor to render in this issue. We are thankful to all who have aided us to such success in the undertaking as readers may judge to have been attained.

In a general way, it may be said that the springtime of 1914 has no superior in years which have gone before. Every possible chance has been given the land to distribute the burden of water which fell so generously several weeks ago. It has done some harm, but nothing to be measured with its contributions of value. The harm, too, has been largely attributable to our own errors, either in choice of place for things or in neglect to fit the place for what we desired to establish upon it. Speaking broadly, California needs a great increase of land under irrigation and has the water waiting for it, but we are always prone to forget the need of prevention of surplus water in places not naturally fitted to distribute it, either by off-flow or penetration. We are really just beginning to realize how much land we have which needs drainage rather than irrigation, or needs drainage associated with irrigation. Everyone has something to remember from what he saw this winter in the behavior of plants on his own land or in his vicinity.

What now seems to be the outlook for the season is testimony to the value of ample supplies of water in California—providing man learns to handle water aright.

Selling Land Which is Unready.

There is another phase of the water-laden land problem which has come into prominence by this winter's experience. It is just as bad to sell land before it is safe from overflow as to sell land with irrigation water which does not arrive—that is, if you agree to furnish land capable of crop-growing in both cases. In past years there has been great disappointment among buyers of dry land for which water was promised; at present the evil seems to be largely from selling land not safely dewatered or drained. In the Sacramento valley there is now pending a suit in which about thirty farm-purchasers join to recover about \$150,000 because, as they allege, "they were induced to buy land from the company under the representation that the land was not subject to overflow by water." We do not know the facts in this particular case and therefore do not pre-judge it, but it is a general fact that lands have been sold during the last two years for certain purposes which are now seen to be of very doubtful availability for those purposes. Two years' short rainfall reduced the water on these lands, or in these lands, to much below the normal. This year's heavy rain made apparent the condition to which they have always been liable, and that is a condition of unreadiness for cropping. The legal liability in a special case depends upon what particular representations were made, probably, but there is a general lesson which should be drawn from the situation. Too many subdivision projects have been put forth upon land, which is more or less desirable for things to which it is adapted, with the representation that it was good for all things. A false security is conveyed by assurance that the land will have an irrigation system—when in fact the land needed an effective drainage system more than it needed irrigation. Fortunately, however, people took a look for themselves and bought in so sparingly that some enterprises have fallen into financial straits because their selling adjuncts brought in so little. The lesson of it all is that it is not good business in farming lands to offer land which is not safely and responsively ready for cropping. What land has done, is a fair basis of estimating its value for other crops which require similar conditions, if one knows how to transpose from terms of one into terms of another, but to try to sell in advance of such fundamental demonstrations, land which has only a record for sheep range or frog ponds for intensive cultures, is almost sure to bring losses to customers and financial distress to those who too hastily and too glowingly exploit such enterprises. Such ill-considered affairs bring losses to individuals and a bad name to the State.

Why Raisin Day in California?

The raisin as a responsible factor in California wealth-making is advancing in public notice. Governor Johnson has done well in commending "Raisin Day, April 30," to greater attention and dignity than it has hitherto attained, and we hope all readers will do what they can to heighten the interest which will proceed from the unique celebration to which Fresno invites the world on the last day of

this month. It is a fortunate fact that, whichever way the California mind goes on the subject of wine-making, which will be voted upon next November, we shall still have the unique quality of being the only state of the union in which the European species of grape (vinifera) is largely grown for commercial purposes. All our wine, table and raisin grapes are varieties of this species, and for these purposes the world has no other grape species which is really great. In a way, California's suitability for this grape is more unique and characteristic than her suitability for citrus or other fruits—save the olive, which is also practically exclusively ours on this continent. It is therefore both proper and pertinent that our Raisin Day should be observed with pride and enthusiasm.

Why Not a Day for Prunes.

And we are concerned about public appreciation of prunes. They do not get half the recognition they deserve—although they surely are gaining in the public mind both at home and abroad. A writer in the Oakland Tribune, referring to our defense of the California prune against defamation by an ignorant writer in an Eastern journal, fitly adds this: "The California prune leads at home and abroad. Since the State has engaged so extensively in its cultivation, its use has become more general. No longer is it looked upon as the dessert of the cheap boarding-house; it is found on the tables of the fashionable rich and the menus of the high-class hotels of the land. It is toothsome and healthy, a tonic and a medicine as well as a dainty tid-bit. It is cheap, wholesome and the delight of all, old and young, and he who assails its integrity as a food adjunct should be confounded." Praise, then, for the prune! It is coming surely into its own and the trials and tribulations of its journey thither will be forgotten. The San Francisco Chamber of Commerce has just given out a statement which the prune deserves to have widely known. It is this: "The reports for the year 1912 show that out of 205,000,000 pounds of this fruit raised in California, 27,652,980 pounds, or 13½ per cent of the entire crop, was consumed in German markets. In 1913, with a smaller crop and increased shipments to Germany, the showing was even more remarkable. The total crop last year in California was 90,000,000 pounds, of which 30,638,261 pounds, or 34 per cent, went to Germany." But though we are glad to contribute this element of health and clear vision to the Germans, we ought to understand better how good the prune is for California also. If the Santa Clara valley people would give their "blossom festival" henceforward a more distinctive prune-promoting purpose, it would lose nothing esthetically and would make important gains otherwise.

No Sauce for the Gander.

Our first conception of the object in making the employers criminal and letting the laborer go free, if the 8-hour law should be broken by both of them, attributed the arrangement to a desire on the part of the "labor councils" to remind employers that they naturally belong in the criminal class. Deeper thinking convinces us that this conception of their motives was rather shallow; there is really much more than that in it for them. With an 8-hour day, a minimum wage, a minimum furniture for the bunk-house, and a minimum menu for the cook-

house—all of which will be covered by successive initiative amendments, if the first is allowed to prevail—the labor bosses and their riding delegates will have developed the finest scheme for farming the laborers which has yet sprung from their fertile brains. No farmer can hire a man for more than eight hours without going to jail, but any man can work as many times eight hours in the twenty-four as he pleases—providing only one eight-hour shift goes to a single employer. As a matter of fact, he can work 24 hours a day for one man, if he likes, without danger to himself, but that would be a clumsy fracture of the spirit of the law and therefore not worthy of skilled workmen. There is a much finer art about it than that. This arises from the fact that a farmer can buy just as much labor in a day as he is willing to pay for; but no one man can do it from any other one man. The labor boss will see that he does not go to jail that way because he can work him better on another line. The labor boss will bring up his gang in an auto-bus and say:

"Farmer Jones, that alfalfa o' yours is goin' stemmy mighty fast. You're in to lose a couple of dollars a ton on it every time the sun rises now. These boys will rattle it eight hours at four bits an hour. Then I can run in another gang, as soon as it finishes its shift at Smith's, and they will stay with it till dark—but it will cost you six bits an hour for that's overtime."

"Well, Boss, that field is comin' on pretty fast and I'd like to get it cocked up before any more of this dry wind gets at it—but I thought we had wages fixed now at 25 per hour minimum and harvest work double minimum. I don't see where triple minimum comes in."

"Oh! Jones, this is emergency overtime and the council has fixed six bits an hour for that."

Will it not be fine to have a law which only works one way, which will give the laborer and his masters the chance to do anything which he and they like and the farmer no chance to carry on his business in a way by which he can get more than his grub out of it—and nip and tuck for grub besides? This proposed amendment is arbitrary, unreasonable, unjust and discriminating. Vote it way down.

Spots on the Harvest Moon!

Where now is the joy of the human race in the great, full moon, hanging night after night in the eastern sky as the sunlight fades in the west? Where is the joy in the work well done and the up-welling emotion of the harvest home? Where is that thankful adoration of the Great God in Heaven for giving his children more light for longer hours of labor? Man commanded the sun to stand still for war: God Himself commanded the moon to stand still for work! For thousands of years, the Harvest Moon has been the symbol of God's beneficence and God's blessing upon man at work in the field! And what tides of feeling have flowed in upon the human heart, drawn from the great ocean of human emotions by the Harvest Moon. How near to God, how near to his fellow man: how sweet the service when one can do more for others than is named in the bond. And the poetry of it: the towering stack well capped: the overflowing mow: the creaking wain: the sighing swain: the crowing child tossed to his father's shoulder by the loving wife—all human joys, all heavenly hopes within reach of him who works for them; not as a laborer for his hire, but freely and unselfishly,

from the very joy of it and the joy it brings to others. It has been this attitude of the farm laborer toward the farm which has made American farming great and different from farming elsewhere. It has been action embodying this spirit which has made so many American farm laborers independent farmers on their own land. It has been disinterested effort for the success of the farm which has entitled the American farm laborer to sit at his employer's table, to be the accepted suitor of his daughter and to inherit the farm. But now there is blood on the face of the Harvest Moon. Labor is being pilloried in the houses of those who claim to be the friends of labor. The buoyant, ambitious farm laborer, personally decent and sympathetically companionable, who saw his way to the land through unselfish truth to the land, is being sullied by contact with those who can see nothing beyond the payroll. God help his Harvest Moon!

Queries and Replies.

Querists must submit full names and addresses.

Picking Off Double Peaches.

To the Editor: Muir peaches in the north end of Santa Clara valley are very generally setting double, treble, and even quadruple fruit for the first time in the memory of most of my neighbors. If we pick these off now, will the single ones have a greater tendency to stick than if we do it later? When is the heaviest drop and what causes it? What causes double-ness of peaches? Are double peaches of use for drying?—W. H. M., Los Altos.

We have to guess at this, partly at least. To escape twice thinning, we should wait and see what is going to stick, and then, if the set is good enough, take off all the multiples. If scant, we should do some splitting of the clusters. As we do not know fully what causes drop, we can not prescribe the effect of removing multiples upon the singles which are retained. Nor do we know what causes the proliferation of buds which results in multiples, unless it be that a reduced sap-flow and pressure, as it gets less effective in pushing wood growth, is more apt to form fruit buds. If this be true, we have to seek a possible cause of unusual numbers of multiples in the lack of soil moisture last summer and autumn. There is abundant field for speculation in these matters, but scant demonstration of actual causes and effects. Double peaches are available for drying, but are usually not first class either in size or shape.

Orange Trees on a Wash?

To the Editor: Last June I planted 400 Valencia orange trees in a red sandy soil, which is washed down from a gulch in the foothills when visited with a heavy precipitation. Elsewhere it becomes more of a clay consistency. About 3% of the trees scarcely leafed out at all last season. This year at best they are putting out little bits of leaves like alfalfa leaves. The balls of the trees seemed to be baked last year. I note that you advise that trees that don't do well should be taken out and thriffter stock put in its place. Now I have been advised that those trees will come out fine later in the season. Could you tell me what trees ought to be replaced and what to leave alone of those I question?—J. C., Orosi.

We cannot even make a good guess in such a case without seeing the trees, the soil and your irrigation methods. If the poor trees are in the wash soils, and a bed of gravel below,

they could not do any better last year for lack of moisture which such a soil condition could not hold long enough to do a tree any good. What you say about baked balls supports this guess. If the trees are not too far gone they are likely to do better when they get more heat to start growth—providing they do not get too dry again. Of course, we cannot tell you which to take out without seeing the trees. It may be that you have spots so leachy that even the thriftest young tree could not grow well.

Lemons in Glenn County.

To the Editor: Would you please tell me what would be the main drawbacks in lemon growing in Glenn county? We have two trees that bear very well without cultivation or water and never freeze. What kind of seed would you advise planting for the root? How would sweet orange seed be? The land is first-class sandy loam, not overflowed land, and is sheltered from the north wind by several thousand acres of timber. How often would you advise irrigating to get best results?—E. W. G., Butte City.

We know no drawbacks: your trees know more about what lemons need than we do: they say go ahead. Sweet orange seedlings will do very well as stock for lemons, but the present practice is overwhelmingly in the line of sour-stock seedlings. No one can tell you how often to irrigate without knowing the depth of the soil, distance to water, etc. The trees will tell you that also if you watch them.

Eradication of Field Mustard.

To the Editor: Please tell me what you consider the most practical and efficient method of dealing with the common and wild mustard which is showing up so strikingly in the barley fields this year. Is the iron sulphate spray or any other chemical weed killer a proven economical and effective means of controlling the weed in this State or is it likely to be a success here? If you do not consider it favorably, what are your reasons, and if you think it feasible, please tell me how to use it.—R. G. R., Orwood.

Kill out as much as you can by cleaning the land by surface working before seeding and pull out the plants which top the grain later—before they ripen seed. Mustard can be killed without injury to grain by sprinkling with iron sulphate. This has been amply demonstrated to be feasible so far as the killing goes. The only thing we have against the process is that we do not know of its being used. If that is a fact it indicates serious objections to the process. If a thing is good and practicable it catches on to current practice.

Water for Red Spider.

To the Editor: In spraying almond trees for red spider, I have been using a spray which corrodes the sprayer, and I have been told that clear water would do the work. Is this true?—G. M., Corning.

Enough water forcibly shot frequently enough after the spiders hatch from the eggs will keep down the pest, but practically no one relies upon that treatment. Use either dry sulphur with a proper blower, or, better than that, spray with the flour paste which was given in detail in our issue of August 23, 1913.

Oranges in Cold Soil.

To the Editor: Some of my orange trees are on lower ground than those surrounding it. They seem to bloom a couple of weeks later. What can be done to make them bloom earlier?—G. S., Fair Oaks.

Underdrain the land or move the trees to higher ground.

Causes of Citrus Gummosis.

[By H. S. FAWCETT of the University of California.]

At least five different and distinct kinds of gum disease of citrus trees are known in this State; two kinds of scaly bark (one scaly bark of the orange and a different one of the lemon); foot rot or mal di gomma affecting the crown roots of either the orange or lemon; and two kinds of gummosis, mostly of lemon trees, one of them sometimes attacking orange trees.

The importance of citrus gummosis is shown by the statement of a large grower, owning 400 acres, to the effect that previous to the last two years, he had taken out an average for the entire orchard of 1% per year of fifteen to eighteen year old lemon trees from gum disease alone. On part of the worst affected tract 5% to 20% were taken out during one bad year. This did not take into account the severe injury to trees affected that were not taken out.

Experiments during the past two seasons have shown that the causal agents in these two forms of gummosis are fungi, and that in addition to the well known methods of prevention, such as improvement of moisture and cultural conditions, a Bordeaux paste may be successfully used in killing out and preventing the spread of these fungi. In both of these types of gummosis, which are known as the brown rot gummosis and gray fungus gummosis, there is dying of the bark followed by exudation of considerable gum on the trunk, usually between the bud union and the branches. Sometimes the brown rot gummosis may start below the bud union and work up on the trunk. The bark does not peel off in the manner of scaly bark, and more gum usually results than in either scaly bark or mal di gomma.

BROWN ROT GUMMOSIS.—In the brown rot gummosis, the bark remains firm and is killed through to the cambium and wood as fast as the disease progresses. Sometimes when very active, the cambium is darkened even in advance of the outer bark and gum oozes through apparently live bark. The bark shrinks and cracks but does not flake off as in scaly bark. There is no evidence to the unaided eye of fungus growth at any stage in this disease. A characteristic odor suggestive of fresh paint is produced in newly killed bark. It is not the same odor, however, as that of a brown rot infected lemon fruit so well known to the nose of the experienced man in the packing house.

FINDING THE CAUSE.—That the brown rot fungus (*Pythiascystis citrophthora*) is the casual agent of this type of gummosis has been proved by a large number of experiments extending over nearly two years. Some of these experiments may be briefly summarized as follows: The fungus was found in the diseased bark of many trees affected with this kind of

gummosis. It was grown in test tubes in pure cultures free from all other fungi or bacteria, and a bit of it placed in a cut in healthy bark of healthy citrus trees. Cuts without fungus were made in the opposite sides of the same trees. In three to six months typical cases of gummosis like the one from which the fungus was first obtained developed around the inoculated cuts. The cuts not inoculated on the opposite sides of the same trees healed perfectly. This was done not only in one tree but in many trees, not only in one locality but in several.

The same results were obtained by inserting into healthy trees small bits of diseased bark from the advancing edges of a diseased area of bark on naturally occurring cases of gummosis. The side of the trees inoculated with diseased bark developed gummosis, and the opposite sides not inoculated healed perfectly. The same result was obtained by inserting a small bit of a brown rot infected fruit into a healthy tree. The side inoculated developed a severe case of gummosis, the other side healed.

FROM TREE TO FRUIT AND BACK.—The fungus after being in the tree ten months and producing a typical case of gummosis was reisolated from this artificially infected tree, the diseased bark was cut out and the tree cured, but the fungus was laid next to a healthy lemon fruit and produced brown rot. Some of the gummosis bark was also cut out and placed next to healthy lemon fruits and produced brown rot. The fungus was isolated from the brown-rot lemon and put into healthy bark, and produced gummosis a second time. Some of these steps were performed many times over till no question of doubt is now left.

In addition to these inoculation experiments, the brown rot fungus has been found in specimens of this kind of gummosis from as many as thirty orchards representing sixteen localities and eight citrus counties from Sacramento to San Diego.

GRAY FUNGUS GUMMOSIS.—Much the same kind of experiments were carried out with the gray fungus gummosis in proving that it is due to another fungus (*Botrytis vulgaris*). This differs from the previously mentioned form in that the bark becomes rather soft and mushy at first. Small patches may be killed through to the wood, but there is usually a larger area around this over which only the outer part of the bark is killed, leaving the inner part and cambium still active and alive for some time.

When the fungus becomes active, especially in moist weather in late winter and spring, the bark softens and is killed to the wood and small raised cushion-like patches of gray spore-covered bodies are produced on the surface. In dry weather in summer or fall, there is often no visible evidence of fungus and its progress appears to be checked. This form of gummosis appears to be confined largely to the coast region of Santa Barbara, Ventura and San Diego counties.

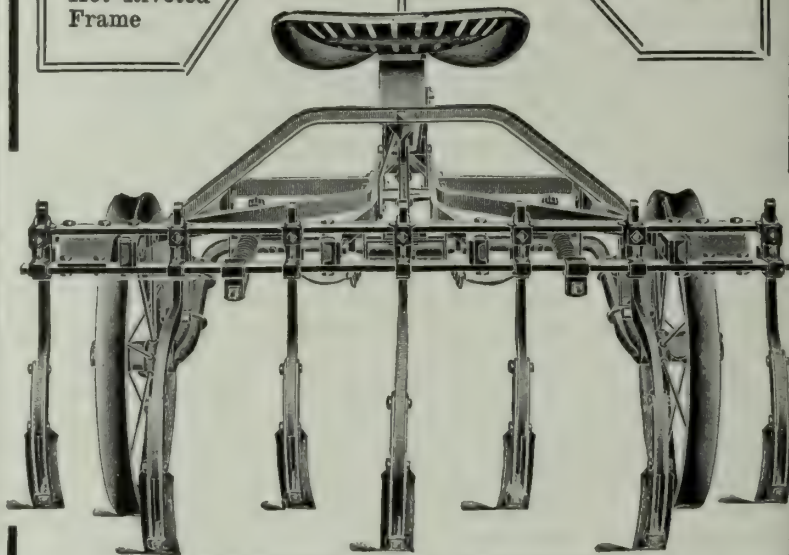
CAUSAL CONDITIONS.—These two fungi, the brown rot fungus and the gray fungus, are the causal agents that do the killing of the bark. There are certain conditions that enable these agents best to get in their work. These are excessive moisture with the soil above the bud union, wet or poorly drained soil, heavy soils as compared

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to light soils, etc. The greater amounts of gum disease of this type have always been known to occur where soil has been allowed to fill in around the trunks at the lower end of irrigated sections. Also where there were leaky ditches, water standing for a long time around the base of the trees, etc. These are known to be the very conditions that encourage the rapid development of the brown rot fungus in the soil.

PREVENTION IS BEST.—In the treatment for any disease, prevention is usually easier and less expensive than cure. Many successful growers have for a long time prevented a large percentage of gummosis by avoiding the casual conditions. By keeping the

soil from filling up around the trunk, by avoiding excessive moisture at the crown, by using lime or gypsum in heavy soils, by using sour stock and budding high for all new plantings, gum disease in citrus trees has been greatly lessened. Experiments have shown that sour orange bark is almost entirely resistant to inoculation of these fungi, sweet orange bark somewhat less, and lemon bark very susceptible. A tree budded quite high on sour stock, therefore, ought to be nearly free from these two forms of gummosis.

[Treatment of infected old trees will be discussed in the next issue.—EDITOR.]

Deciduous Market Indications.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE, Manager California Fruit Exchange.]

Having just returned from a six weeks' tour of the principal markets of the East, my judgment is that trade prospects are more favorable now than they have been this last fall and winter. The financial conditions are more settled and the country at large seems to enjoy a feeling of rest and security. Money is considerably easier and reports generally favorable for a good grain crop. This in itself gives an upward tone to the market.

The reports were current two months ago that the fruit crop in the United States would be a bumper one, but unfavorable weather since that time in a great many of the fruit producing districts indicates that the peach crop in Texas has been damaged at least 75%; Georgia, from 25 to 40%; Arkansas, 25 to 40%; Louisiana, 60%; Missouri, 60%; Kansas, 75%; New York State, 75%, and the Middle West about 50%. This, of course, does not apply to the vineyards, as it is too early to determine the situation on grapes.

California will probably not market more than eleven to twelve thousand carloads of deciduous fruit this season, though it was predicted a month ago

that the crop would be larger than last season.

Bartlett pears and plums on the Sacramento river have suffered considerably on account of the recent hailstorm on the night of April 5. It was so severe that in a great many orchards the leaves were cut into ribbons.

Owing to the last two seasons being unusually dry in the Vacaville and Winters district, this has had a serious effect upon the trees, and, consequently, the buds were not of sufficient strength to develop and the crop, especially of apricots and a great many varieties of plums, will be light.

Placer county, the heaviest shipping section of deciduous fruits in the State, will not produce over 75% of a crop. This applies to nearly all varieties. Cherries are extremely light, as are also some Japanese varieties of plums.

The San Joaquin valley gives indications at present of a large peach crop, especially of the cling varieties, though this may be seriously reduced before harvest by north winds, which in the last two seasons have been very prevalent from Modesto south.

All districts have had a bountiful rainfall, which has been in excess of any year in the last five, and the orchardists have had every opportunity for plowing and cultivating their orchards and vineyards to their entire satisfaction.

Reports show that three years ago the State of Michigan marketed over 3000 cars of black grapes, which were sold for table consumption throughout the Eastern States. Two years ago Michigan marketed 1500 cars, and last season only 500, though the crop was above the average. The balance of these grapes were sold for the manufacture of grape juice and growers realized from \$50 to \$120 per ton. The favorable introduction of grape juice in society recently has added greatly to the benefit of the grape growing industry, and naturally aids the California Tokay and Malaga shippers on account of the fact that it removes from competition these New York State and Michigan table grapes, which, up to the present season, have been more favorably received by the consumer than the California grape, due to the fact that they are slipskins of a different flavor, and the people in the East are more accustomed to their home-grown varieties.

I firmly believe that the season of 1914 will be a most satisfactory one for the deciduous fruit grower of California, though it would be unreasonable to expect such high prices as in 1913.

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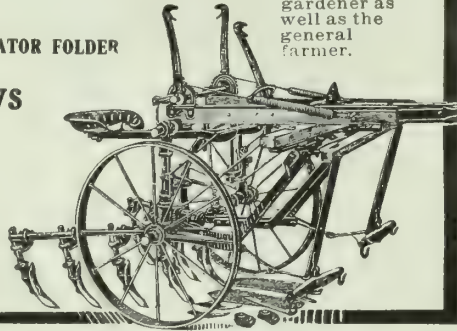
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California Crop Conditions—By Sections.

[Specially prepared for the PACIFIC RURAL PRESS.]

Conditions Around Sacramento.

Heavy plantings of orange trees in Sacramento county are being made this spring, it being stated that fully 20,000 trees will be set out. Nearly 10,000 olive trees have also been planted. Quite a lot of new acreage of almonds and table grapes will come into bearing this season. All fruits promise good yields, with the exception of pears, which were damaged in the island section by a hailstorm which passed over there about two weeks ago. The hay crop will be very heavy, and the tonnage will be larger on account of over 300 acres of new alfalfa acreage. Grain promises a big crop from an unusually large acreage.

The Upper Sacramento.

Some sections were hurt by frost, others by the hot March weather. Almonds in Butte and Shasta counties look fine, but were hurt in Yolo and Solano counties. Peaches are good; prunes still questionable; pears good.

San Joaquin County Crops.

A very heavy crop of grain is expected, as the acreage is unusually large, and the land that did not produce last year is expected to give a heavy yield this. Seeding is nearly all done. The bean acreage is expected to be larger than usual. Potatoes about average acreage, but the early crop will be light owing to heavy rains in February. Fruit promises well in all sections. Around Lodi the grape-growers are looking for splendid yields.

San Joaquin Valley.

March was an ideal month in Kings and crops look good. Tulare has been a little dry. Brown scale is engaging attention of citrus growers. All crops are almost normal. Large melon acreage is promised in Merced, where olives and grapes show good signs, but cannot yet be foretold, according to George Marchbank. Stanislaus melons are proposed for extensive acreage and the growers may organize. Merced fruits look fine except the apricots.

Fresno county has sold about two-thirds of the 1914 fig crop at $3\frac{1}{2}$ to 4 cents. Table grapes are being contracted at \$20 to \$40 per ton, a few green peaches \$20, dried peaches here and in Kings county at $4\frac{1}{2}$ c, raisins $2\frac{1}{2}$ to 4c, dried apricots $8\frac{1}{2}$ c, prunes $3\frac{1}{2}$ c base.

Fruits North of the Bay.

In the counties north of the bay there are a few places where fruit is seriously hurt by the frosty nights of March 25, 26, and 27. The warm weather preceding those dates had brought it well along, and the moist cloudy weather since has made it difficult to tell the damage accurately, especially on prunes. Icicles several inches long froze in upper Napa valley, and peaches and plums close to the river above Napa are lost for this year. Pears are heavily set and very few of the most exposed show browned centers. Early apples in both Sonoma and Napa counties were probably not hurt; later ones were in full bloom

and seem to have escaped. Gravensteins are blooming unevenly, which will probably result in many wormy apples. Prunes in Mendocino seem untouched, in Sonoma and Napa counties a comfortable per cent are larger than peas, and the second size are still sticking well, though there is a heavy drop. Hot weather hurried French prune bloom too fast in Napa, so that many were dried up before fertilization. Bright weather for a day or two is required to see how many of the second size will drop. Sizes will be better, however, and make up for any heavy drop. Black cherries in the Forestville district were considerably frosted; white ones are an unknown quantity. In Napa large numbers of cherry blossoms are dried without setting fruit, but there are enough half grown to insure a very good crop. Apricots and almonds are not very important in these counties—they are hard hit. Peaches in most parts are a rather light crop, but relatively unimportant. Grapes were hurt badly in certain sections, but it is hoped that the dormant buds will send out new shoots.

Around Hayward and Niles.

Generally speaking, crop prospects are good at this time in Alameda county, with the possible exception of apricots, which suffered considerably by the recent warm spell and are now estimated at 50% of a full crop. Prunes are given as 90% of a full crop, while pears run from 75 to 100%, according to the locality, although it is still too early to judge accurately on this fruit. With 193,600 trees, much of this county is interested in cherries, which are now heavily laden with blossoms and give promise of a heavy crop, although some believe that there will be a drop later and that will cut the crop down to 75%. The 63,000 bearing trees of almonds promise to give 85% of a full crop, while a small acreage of peaches and plums will likely amount to from 75 to 90% of a full crop.

The year promises to be a good one for currants and berries, although the yield of rhubarb was not up to normal on account of last year being dry. The soil is in ideal condition for the planting of tomatoes, cucumbers, and other vegetable crops; and big crops are expected, as well as of grain and hay, a large acreage of which has been planted this season.

Fruits in Santa Clara Valley.

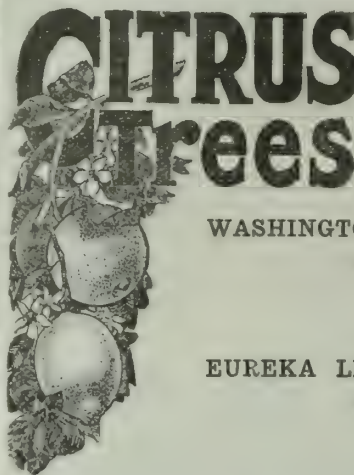
By W. H. SCHRADER.

Whether or not Santa Clara valley is to have a prune crop this year will probably be decided before the time this reaches PACIFIC RURAL PRESS readers. At present writing it is absolutely impossible to predict the percentage with any hope of being accurate; but the next few days are expected to tell the story.

The second size prunes, which form the bulk of the setting, will either succeed in throwing off their husks and start growing, or will give up in despair and drop off. If they succeed, there will be a crop. If they don't, prunes will be scarce. They have been at a standstill for some time and ordinarily would be expected to drop off, but exceptionally favorable moisture and temperature conditions recently have enabled them to hang on longer than usual and those conditions

may help them to pull through. The growers are doing all that they can to help in the way of cultivation, irrigation, etc., but are not very hopeful.

We understand the Farmers' Union a few days ago went on record as predicting a very light crop, basing their predictions on conditions in the early



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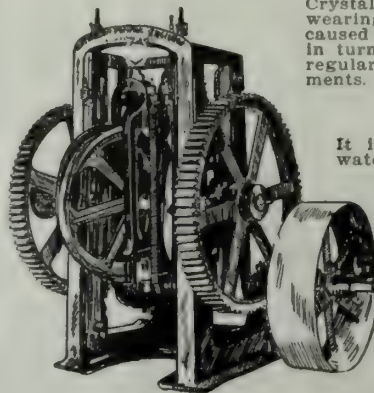
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blooming districts. The packers and buyers are still professing to look for a big crop, but at the same time are actively buying at good prices. Their activity, however, is probably partly due to the condition of the market.

A buyer, whom I have always found fair and conservative, said to me Friday: "We are hoping and looking for a good crop. The market is in fine condition to handle it. All prunes are out of the growers' hands and by the time the new crop is in, everything will be cleaned up. The market is in the same condition it was three years ago."

Two years ago, with a good crop in nearly every section, Santa Clara produced about 85,000,000 lbs. of dried prunes. This may be regarded as a normal crop. Last year only 35,000,000 lbs., or about a 40% crop. Our report of a 50% crop for this year is based on the hope that at least a part of the doubtful prunes will stick. The next few days may show that it is way too high or way too low.

There was no appreciable damage by frost or thrips, and the fact that the same condition prevails in both irrigated and non-irrigated orchards would indicate that two dry years are not to blame. The prevailing opinion is that unusually hot weather at blossoming time is to blame for whatever damage has been done.

OTHER FRUITS.—Apricots, though

spotted, will make a good crop. With the new acreage coming into bearing, it is likely that the production will equal that of any previous year. Peaches are looking well everywhere and will make a good crop. Reports of damage to cherries by the hot weather are received from some sections, but generally the crop will be good. Almonds, apples, and pears also give promise of good yield.

Lower Coast Counties.

No frost reported nor unfavorable conditions, but low percentages from Monterey county, otherwise quite favorable.

Southern California.

Apricots were hurt in Imperial valley by hot weather at blooming and by lack of winter irrigation. In large orchard plantings last month, olives led the fruits, with pomelos a close second. Apricots of San Bernardino suffered slight loss from high wind, but are good in Los Angeles and San Diego counties. Other fruits look normal or better. Orange county strawberries promise large production.

PRESENT STATE CROP CONDITIONS.

(Continued From Page 467)

Walnuts in heavy producing sections

are blooming well and the promise is good.

Deciduous fruits of Oregon and the East have suffered from frost, and peach growers of Georgia have been smudging their orchards.

CANNED FRUITS.—A larger market for suitable varieties is expected because American stocks are pretty well cleaned up, many new canneries have been erected and a large consumption is expected on account of the World's Fair. Aside from this, it is hard to speak of the amount to be canned because that depends on the Eastern crops which cannot be predicted now. The total canned output, according to Mr. Bentley, of the California Fruit Canners' Association, is about 7,000,000 cases of fruits and vegetables annually for the State.

DRIED FRUITS.—Practically all dried fruits are cleaned up except peaches, and these are nearing the end. Buyers have been getting some of the 1914 crop at 4½¢ for peaches and prunes, and 8½¢ for apricots. Raisin growers are prepared to hold their crops for their own prices. Ralph Butler, of the Napa Fruit Co., recently returned from the East, where he found conditions favorable for our dried crops. This is reflected in the recent upward trend of dried fruit prices.

GENERAL OUTLOOK.—With the best crop prospects of years, and the mar-

kets nearly bare, it looks like the California growers of fruits may well hold their fruit for good prices and great prospects.

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DECIDUOUS FRUIT CROP ESTIMATE FOR WEEK OF APRIL 15, 1914.

COUNTIES.	Acres in Table Grapes	% of Full Crop.	Pear Trees in Bearing	% of Full Crop.	Peach Trees in Bearing	% of Full Crop.	Prune Trees in Bearing	% of Full Crop.	Plum Trees in Bearing	% of Full Crop.	Apricot Trees in Bearing
Alameda	415,000	50	15,000	90	11,600	90	8,400	75	56,000	75	2,300
Butte	7,545	80	100	100	84,405	100	133,638	100	13,199	100	25
Colusa	17,000	75	100	100	92,500	75	13,000	100	7,000	100	300
Contra Costa	53,100	60	2,840	50	54,220	100	28,200	130	73,500	100	1,105
El Dorado	400	100	1,000	100	124,000	100	110,000	100	70,000	100	200
Fresno	145,600	100	10,600	100	83,000	100	3,270,000	100	100	100	2,340
Humboldt	100	100	100	100	100	100	100	100	100	100	100
Kern	25,000	100	6,000	100	4,100	100	50,000	100	1,500	100	100
Kings	79,600	100	100	100	6,860	100	386,200	100	100	100	100
Lake	1,975	100	100	100	29,622	100	5,829	100	24,850	75	48
Los Angeles	200,300	100	53,000	100	61,710	100	218,720	100	75,000	100	81
Madera	10,000	40	100	100	90	70,000	95	100	100	100	135
Mendocina	500	100	2,000	100	20,000	100	10,000	100	10,000	100	250
Merced	8,250	40	100	100	1,525	100	148,401	100	4,250	100	475
Monterey	25,000	125	1,100	40	3,350	60	9,500	50	6,200	100	150
Napa	17,000	50	120,300	100	91,180	50	107,880	50	69,120	80	100
Nevada	170	100	2,300	100	5,800	100	12,760	125	36,270	75	210
Orange	167,240	80	25	100	17,320	100	38,350	25	100	100	100
Placer	7,485	100	239,000	100	20,465	100	994,250	100	104,600	100	1,765
Riverside	66,317	100	100	100	22,138	100	45,293	100	12,151	100	311
Sacramento	20,000	90	7,600	90	100,000	100	65,000	100	220,000	87	6,500
San Benito	40,000	90	2,700	100	125,000	95	15,000	100	6,000	100	25
San Bernardino	26,200	90	100	100	2,800	100	8,250	98	18,500	100	749
San Diego	9,140	100	100	100	3,240	100	8,760	100	2,318	100	1,500
San Joaquin	70,540	100	18,350	100	52,815	100	234,130	100	27,425	100	26,252
Santa Barbara	3,450	100	100	100	1,250	100	2,325	100	715	100	526
Santa Clara	600,000	80	271,000	100	5,357,900	50	610,500	100	131,200	90	417
Santa Cruz	56,440	100	100	100	99,096	100	10,594	100	14,286	100	249
Shasta	650,000	100	1,000	100	87,500	100	46,000	95	30,000	100	150
Solano	237,800	10	110,000	40	465,000	45	490,600	60	203,000	80	495
Sonoma	23,450	50	6,700	70	598,040	75	28,670	80	81,270	100	650
Stanislaus	11,500	100	5,300	100	8,190	100	200,410	100	6,820	100	462
Sutter	4,804	100	100	100	39,922	100	130,854	100	11,309	100	130
Tehama	64,410	100	6,000	100	115,700	100	679,400	110	63,050	100	100
Tulare	32,075	90	12,000	90	137,935	90	348,170	100	3,287	90	5,825
Ventura	200,000	90	100	100	19,000	100	7,800	100	100	100	100
Yolo	121,520	45	3,500	90	98,800	50	146,600	75	51,000	90	300
Yuba	18,750	50	100	90	5,055	70	69,555	60	14,450	100	100

Counties reporting on almonds are as follows: Alameda, 85%; Butte, 95; Colusa, 100; Contra Costa, 60; Glenn, 100; Lake, 100; Los Angeles, 100; Madera, 100; Merced, 100; Monterey, 50; Napa, 50; Nevada, 100; Riverside, 100; San Benito, 75; Santa Clara, 75; San Joaquin, 100; Shasta, 100; Solano, 60; Sonoma, 25; Tulare, 90; Ventura, 80; Yolo, 60; Yuba, 70%.

Counties reporting on cherries: Alameda, 75%; Butte, 100; Colusa, 100; Contra Costa, 75; El Dorado, 100;

Humboldt, 100; Monterey, 50; Napa, 80; Nevada, 125; Riverside, 100; San Bernardino, 100; Santa Clara, 80; San Joaquin, 100; Santa Barbara, 100; Shasta, 100; Solano, 40; Sonoma, 75; Yuba, 90%.

Counties reporting on apples: Humboldt, fine; Los Angeles, 90%; Riverside, good; Shasta, 90; Sonoma, 100%.

Counties reporting on figs: Butte, 100%; Colusa, 100; Fresno, 100; Glenn, 100; Imperial, 100; Los Angeles, 100; Madera, 100; Merced, 100; Sonoma, 80;

Tulare, 100; Yolo, light; Yuba, 70%.

Counties reporting on grapes: Fresno table grapes, 100%; Los Angeles, all varieties 100; Madera, 95; Sonoma, 70; Yolo, 65%.

Counties reporting on citrus fruits, walnuts, and olives: Los Angeles, oranges 100, lemons 75, olives 100, walnuts 100; Madera, olives 100; San Bernardino, citrus normal; Santa Barbara, walnuts 100%.

On apples, figs, grapes, citrus fruits, olives and walnuts the reports are merely nominal.

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Counties Building for Agriculture.

[Written for the PACIFIC RURAL PRESS
by HAROLD FRENCH.]

Reciprocal as the relations between the farmer and the miner have become, there are many good reasons why they should keep at a mutually respectful distance "mid pleasures and palaces" of our great World's Fair. If they should crowd each other, they would defeat their common purpose of effectively advertising the resources of their state. Some county exhibitors might mingle in motley array ores and oranges, bearded sheaves and tasseled ears, while Brobdignagian pumpkins may eclipse Lilliputian oil derricks or dredges. Such kaleidoscopic details may dazzle the beholder, but are of little educational or advertising value.

Unfortunately, there is no space available in the California Counties Building for a state display, while the only funds at the disposal of the County Commissioners will be the sums raised locally for county exhibits. So, the original plan was to place individual county collections of ores and models of mining methods in with the rest of each county's show-features. This would inevitably result in overcrowding, and each industry would suffer injustice thereby. Agriculture, California's foremost industry should have ample space in the Counties Building. It should not be restricted by mining exhibits which properly belong in the Palace of Mines and Metallurgy.

The chief of that department, Professor C. E. Van Barneveld, wisely urges that California's mining exhibits be placed in a commodious square in the very centre of the Palace of Mines. If this plan is accepted by the County Commissioners, the threatened congestion in the Counties Building will be obviated.

All that is required is an understanding of the situation which will result in the apportionment of funds for the installation of a state mining exhibit in the Palace of Mines and Metallurgy. This will depend upon the initiative of the representatives of California's fifty-eight counties.

MINING HELPS FARMING. In approaching the solution of this problem, let us consider the relationship between the farmer and the miner.

Every county derives great benefit from the mining industry of this State. The total value of its products in 1913 exceeded \$93,000,000. According to the census of 1910, the total value of farm crops produced in California in 1909 was \$153,111,013. During the same year, the value of manufactured products aggregated \$529,761,000.

The prosperity of the farming community depends very largely upon the further extension of the petroleum industry. Oil leads to the development of manufacturing establishments which have been fostered by the utilization of this most economical fuel. Los Angeles county has a revenue of nearly \$100,000,000 from its manufacturing plants, the great majority of which owe their existence to the development of nearby oil fields. Workmen in these factories must be fed by the farmer.

FARMING AND MINING NEED FULL SPACE.—Los Angeles, Kern, and Fresno counties may wish to display their petroleum industry side by side with the agricultural products of their

fertile valley lands. But space will permit only a meager representation of their wealth-distributing oil fields. The result would be that space, which should be devoted to an attractive display of fruits and vegetables, would be taken up by the more or less confusing details of derricks, oil tanks, samples of petroleum products and oil bearing sands and shales. These would be duplicated by the other oil-producing counties of Southern California.

The logical location for petroleum displays would obviously be in the Palace of Mines where there will be ample area for a comprehensive exhibit of the oil industry, which produced more than \$41,000,000 last year. Local pride will be far better gratified by each oil-producing county participating in the segregated state exhibit of California in the very centre of the Mines Building. To this, visitors in the Counties Building may be referred by means of monuments and signs, pointing the way to reach its unique petroleum display in the Palace of Mines.

Similarly, the valley counties are vitally interested in the welfare of the dredging industry from which a large part of the gold of the state is recovered. Vast sums derived from dredging operations are going back into the development of the adjacent agricultural districts. More capital is required to extend the scope of this phase of mining. Engineers have estimated that from \$5,000,000 to \$10,000,000 a year in gold can be economically extracted in addition to the present production. Every one will realize what this will mean to California if it is put in circulation.

Miniature dredges or mere photographs sandwiched in between more imposing agricultural displays will attract but little attention. But a sign pointing to a comprehensive exhibit of working models in the Mining Building will direct the public to inspect a more instructive object lesson in dredging in the valley counties that will be most convincing in its assembled and co-ordinated details.

WHERE MINING OVERSHADOWS FARMING.—In the Mother Lode mining counties, where quartz-mining is the leading industry, mining exhibits would overshadow their displays from the foothill orchards, vineyards, and grazing lands. What the farmers of the Sierran slopes have to show will be seen to far better advantage if the locally dominant mining industry of these counties is represented in the building devoted to mining.

A grand collective exhibit of quartz mining in California is to be installed in this department. Opposite the space it will occupy, each district may advertise its special attractions by a supplementary local exhibit.

The need of more capital to develop the vast ore bodies of this State will be set forth in a convincing manner. By no more effective means can capital be attracted to the mining counties of California. As a result, millions of dollars will be invested in mining properties within our State, providing work for thousands and creating larger local markets for the products of our farms.

In like manner other mining operations can not be shown to any good purpose in a congested area. With the ever growing demand for steel, the extensive iron ore deposits of Califor-

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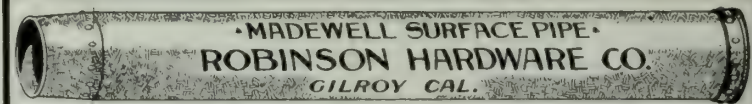
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The "K-T" Irrigation System

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Other High-grade Seed at "Low Price and No Price Can Buy Better."

WEST COAST
SEED HOUSE

116-118 E. 7th Street, Los Angeles



nia must soon be developed. An array of iron ores and their metallic products has no place among agricultural displays. Copper, quicksilver and other mineral products are to be seen to best advantage in the Palace of Mines.

Potash, so essential as a fertilizer, exists in large quantities in this State. This is one form of the mineral industry which has a most direct interest to the farmer. The development of these potash deposits will depend very largely upon the showing made in the California section in the Palace of Mines.

NEED FOR QUICK DECISION.—Already the space in the Palace of Mines and Metallurgy has been taken up, except the central area reserved for California's State exhibit. The disposition of this valuable space will very soon

have to be decided by the County Commissioners.

It is to be expected that the counties wherein mining is being conducted will take the lead in urging the segregation of mining exhibits from agricultural displays. But since all of the counties of California benefit substantially by supplying the miner's and manufacturers' needs, their common interest warrants state-wide co-operation in a result-getting State exhibit of mining, which will leave enough room in the Counties Building for agriculture.

STRAWBERRY MONOPOLIZED A COUNTY.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Presiding over a little grocery store of Placer county, a mild-mannered, gray-haired old man with a very youthful twinkle around his eyes is making good the debts from which the law freed him many years ago when he and his father failed to get the capital required to carry their nursery business over the succession of discouraging years.

Yet to this man Placer county owes the "Dollar" strawberry which has eclipsed all other varieties and has made non-bearing fruit orchards very profitable.

It was over twenty years ago that Mr. Silva subscribed for an eastern farm paper published by a nurseryman. As a premium for the subscription, the nurseryman sent a dozen plants of the "Dozen Dollar" strawberry. The next year the plants grew so "awful" well, although they did not make new plants very fast, that an over-demand came at once. At that time they were almost bushy, sending long fruit stalks up through tall vigorous foliage wherever they grew, on washed sand or clayey soil. The upright fruit stalks kept the berries clean and the fruit soon showed its supremacy as a shipping berry. "I presume it's the best ever grown," says Mr. Silva with the mildness of Luther Burbank.

Peculiarly enough, when more plants were ordered from the East, the orders were returned with the information that the variety had shown a weakness which had caused it to be discarded.

CONTINUED POPULARITY. — Although the plant has changed to a flat grower, and twenty years of improved varieties have come and gone, it is the "Dollar" strawberry which is now planted between young trees, wherever fruit is grown in Placer county, in order to get tenants to care for the place until the orchards bear. And many fields are planted to this berry alone.

The tenant on L. J. Kinney's young orchard near Loomis cared for a strawberry crop which netted him over \$1000 last year. Mr. Kinney objects to the use of strawberries in this way because they must be freely irrigated, bringing tree roots upward to the surface. Of course the plant food removed by the berries can be replaced and perhaps cultivation will keep the roots low down. Water will have to be applied to the trees anyway, so the nearness of the roots to the surface will place them ready for the available supply of plant food.

Above Auburn, where the county horticultural commissioner H. H. Bowman lives, not a great deal of fruit can be grown except pears and strawberries, on account of the greater elevation and nearness to the snowy Sierras.



If You Want to Beautify Your Grounds

There is no better way than to communicate with us, and get our estimate on trees, shrubs, and plants best suited to Californian conditions.

We make a specialty of

Landscape Gardening

and grow our own plants

A cordial invitation is extended to all to visit our grounds and experimental orchards.

We still have fruit trees, nut trees, grape vines and berries for late planting.

Leonard-Coates Nursery Co., Inc.

Morgan Hill, Cal.

PERFORATED TREE PROTECTORS



The only perforated protectors made, practically a small lath house about each tree, allowing at all times the free circulation of air as well as mellowing the hot rays of the sun while at the same time giving perfect protection. No moldy or smutty bark when using Our Wraps.

WHEN DOES THE TREE NEED PROTECTION THE MOST? You know, while it is young and tender; then let Us supply You with Protectors; it's the best investment you can make after setting out Your trees; if Your dealer hasn't them send Your order to Us and We will fill it promptly.

Write for Sample and Prices.

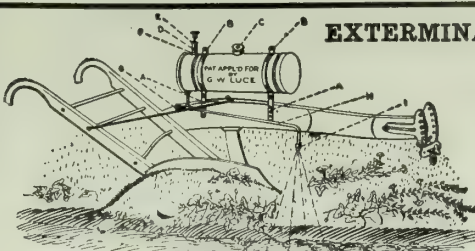
The Expan Protector Co.

935 E. Central Ave., Redlands, Cal.



GOPHER TRAP DEATH

Kills Prairie Dogs and Gophers of all kinds. Endorsed by State Experimental Stations. 1400 tablets prepaid for \$1.25. Warranted. Ratocide Tablets, 25c. Ask druggist or send direct. Booklet Free. F. D. Chemical Co., Ft. Dodge, Ia.



EXTERMINATE MORNING GLORY

Johnson Grass, Bermuda Grass, Noxious Weeds and Injurious Insects with **NONPAREIL** and the **PRESTO PLOW TANK**

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, \$8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

The growing season and not the dormant period is the right time to do the work.

One large grower has purchased up to date this year \$2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphids, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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Water! Water!! Irrigation! Irrigation!!

Don't worry about a dry season. Insure against a failure of crops by boring wells, thereby securing a bountiful supply of pure water.

W.W. Montague & Co.

Established 1858

PIONEER MANUFACTURERS OF WELL CASING

Double or Single, Black or Red Steel and Galvanized.

56 years' experience; employment of skilled mechanics, operating modern machinery, using best quality of steel specially rolled for casing, enables them to produce a superior quality, to meet the requirements of well-borers who pronounce Montague's Casing the Best.

Montague casing put in wells in Santa Clara County 50 years ago giving good service today.

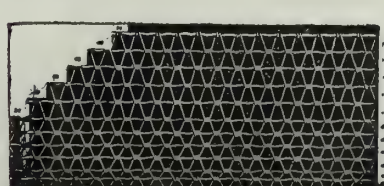
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THE WORLD'S LARGEST HAY PILE (2700 TONS)

THIS HAY HAS BEEN HANDLED THREE TIMES WITH THE SCHMEISER PORTABLE AUTOMATIC DERRICK. FIRST, FROM THE FIELD ON TO THE STACK, THE BALES LIFTED ON TO THE WAGON AND FROM THE WAGON ON TO THE PILE AS YOU SEE IT. CAN AS MUCH BE DONE WITH ANY OTHER DERRICK? FOR FULL INFORMATION, WRITE THE SCHMEISER MFG. CO. DAVIS, CAL.

KOKOMO Self Regulating FENCE



STRONG Because it is made of large High Carbon Steel Wires.

DURABLE Because it is double galvanized and all wires interwoven and securely locked at each intersection.

CHEAP Because it is sold by actual weight at DIRECT FACTORY PRICES.

Write for catalogue and price list.

CALIFORNIA ANCHOR FENCE CO.

622 E. Main St. Stockton, Cal.

DEWEY, STRONG & CO. PATENTS

911 Crocker Bldg., S. F.

Circular containing 100 mechanical movements mailed free.

AGRICULTURAL REVIEW.

Local Crop Notes.

Some of Butte county's 100% reports are in reality 125% of a normal yield, according to Earle Mills.

Colusa county prunes are not setting well, but apricots and peaches have, as reported by L. R. Boedefeld.

Fresno county is practically out of frost danger.

Glenn county had no damaging frosts; moisture and growing conditions are perfect, according to W. S. Guilford.

W. G. Stimmel, of Tehama county, says: "Peaches 110% and killed all the twins."

"Apricots are dropping in Merced county so that the percentage cannot be told accurately yet," says N. H. Wilson, "but prospects for a big fruit crop never looked better."

J. B. Hickman, of Monterey county, writes that recent rains have assured heavy crops of hay and grain.

Napa county walnuts were frosted. Fruits in the lower Napa valley were somewhat injured by hot windy weather, but will be at least fair.

Bartlett pears will drop heavily in Nevada county, according to D. F. Norton, but Anjous, Howells, and Comice will be 100% and peaches are set heavier than ever before in the county.

Up to April 1, 1,865 cars of citrus fruits had been shipped this season from Riverside district, with about 1,350 yet to come.

C. W. Beers, of Santa Barbara, reports that "the seasonal conditions have been favorable all along, and

the blooming of fruits is excessively heavy, with great abundance of pollen, and no cold rains to check fertilizing of fruit buds. We notice this condition is a great factor in the walnut industry. Walnut bloom is heavy and the catkins very abundant."

Apricots and peaches in two localities of San Bernardino county are reported by S. A. Pease as injured by wind.

San Diego county's deciduous prospects are first class as reported by H. A. Weinland.

Sonoma county peach and plum acreage is decreasing, according to A. R. Gallaway.

Charles Collins writes that Tulare hay is heavy and grain looking fairly well.

Yolo county prunes indicated a 50% crop and were still dropping April 9. The frost of March 27 reduced grape prospects 30 to 40%, as observed by G. H. Hecke.

G. W. Harney has seen signs of pear scab and peach curl-leaf in Yuba county.

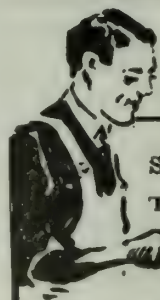
Olive trees badly infested with black scale imported to Imperial county were held by the horticultural commissioner until hand picked and washed in oil emulsion.

No cottonseed may be imported to California except for experimental purposes, in which case it must be sent to the quarantine officer at San Francisco.

Fruit has been planted on 3325 acres in Butte county with trees from

outside nurseries. Probably home nurseries furnished nearly as many.

Prunes much more than doubled their nearest competitors, olives and or-



YOU GET MORE WEIGHT BY BALING WHEN HAY IS READY. PROFIT INCREASES WITH WEIGHT.

Satisfied users say that—

THE Lightning Combined Hay Press and Engine

—is the best on the market

IF YOUR acreage is not large enough to pay you to buy a hay press by yourself, undoubtedly you can do so in conjunction with your neighbors. It will soon pay its cost by securing you ALL of the value of your crop. Our press is most convenient. It is low and short. Requires the least amount of labor. Cost per ton for baling is less. Ample power. Neat 17x22 bales.

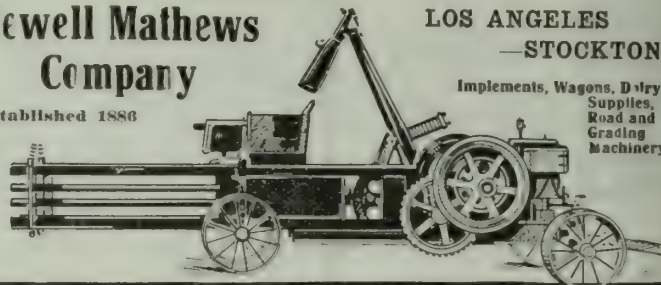
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Newell Mathews Company

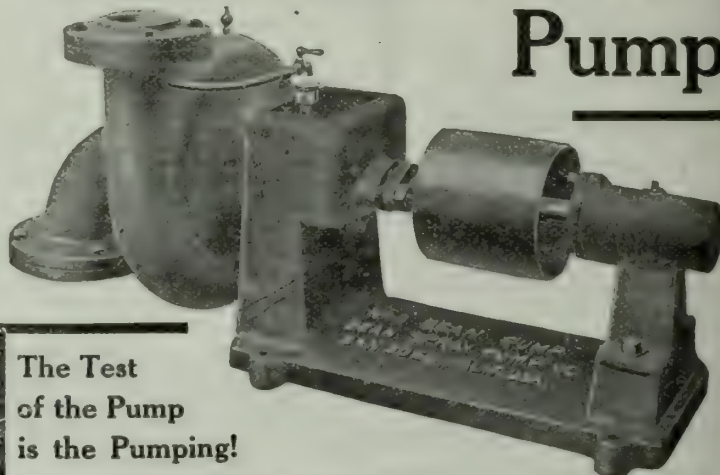
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LOS ANGELES — STOCKTON

Implements, Wagons, Dry Supplies, Road and Grading Machinery



"Bean" Centrifugal Pumps



The Test of the Pump is the Pumping!

When you connect up the pump and turn on the power—that's when the real test comes! And that's when the owner of a Bean begins to realize that he has made the right selection. The Bean (known for many years as the Caton) is the most efficient and satisfactory centrifugal pump on the market. Among its many distinctive advantages is the Bean Water-sealed Stuffing Box which practically ends stuffing box troubles. It insures an absolutely air-tight seal. The Bean is automatically balanced regardless of water level; has ring oiling bearings; and suction and discharge can be turned to any desired angle.

Send for Catalogue 28-B; It illustrates and describes the entire Bean line of horizontal and vertical pumps and gives much helpful pumping information.

BEAN SPRAY PUMP COMPANY

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SAN JOSE, CALIFORNIA

There are No Water Pumping Problems

—where the Layne & Bowler System is installed. This System is constructed according to the specifications of the well it is intended for, which insures an absolute control of sand and other troubles—a System that will produce the maximum capacity of your well and do so at the least cost. There is a Layne & Bowler pump to fulfill your specific requirements.

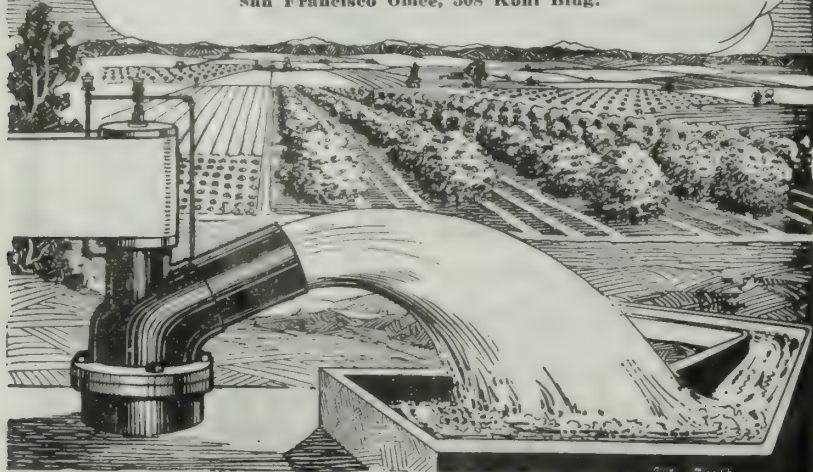
DECIDE IN FAVOR OF THE LAYNE & BOWLER SYSTEM

The Layne & Bowler pump is rigidly constructed to withstand constant wear. No pit is required, all adjusting is done on top of the ground, and all parts are easy to get at. Install this System—lower your water producing cost, insure a continual supply and eliminate further experiments.

Write our irrigation and water engineers for free advice. They will assist you to overcome your present pumping troubles. Ask for Catalog No. 25, which tells all about the Layne & Bowler Pumping System.

Layne & Bowler Corporation

900-910 Santa Fe Ave., Los Angeles, Cal.
San Francisco Office, 508 Kohl Bldg.



The Campbell Automatic Irrigation Sprinkler

Solves the "Irrigation Problem" and affords rain when you want it, and like you want it, at the minimum cost of installation and operation. Sample postpaid \$3.00. Money back if you want it. Descriptive literature on request.

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PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal. Mention Rural Press.

RECEIVED TOO LATE FOR CLASSIFICATION.

1700 budded Eureka Lemon trees, 1/2 to 1 inch stock. Reduced prices. No better trees grown. Mrs. S. A. Parker, 542 Franklin, Whittier, Cal.

AVOCADOS—Seedlings, 3 to 8 feet, 60c to \$1. Budded trees, \$3. All field grown. Discount on quantities. Magnolia Nursery, Whittier.

WANTED—Position as manager of a large orchard. Best references and many years experience. Address Box 19, Pacific Rural Press.

I'll Pay Your Way—

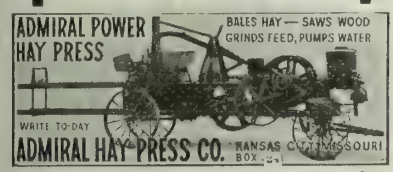
to Sacramento for the Farm Power Show. I want to compare tractors where you can see them all at work. I have so much faith in the

C. L. B. TRACK LAYING TRACTOR

based on what it is actually doing in the field, that I welcome this test. Come to Sacramento on May 7th, 8th and 9th. See all the tractors at work. No matter what make you buy, I'll refund your fare to and from Sacramento, providing you examine my tractor before you buy.

C. L. BEST GAS TRACTION CO. OAKLAND, CAL.

ADMIRAL Motor Baler with GASOLINE ENGINE



Best and cheapest power baler and press on the market. Three sizes, 17x22, 16x18 and 14x18. Furnished without engine as desired to belt to your own engine. Liberal terms and prices. Immediate shipments from Los Angeles, or factory as desired. Complete line with the extra parts in Los Angeles stock. Write for catalogue, prices and agency.

J. M. BLYTHE
Factory sales agent for California and Arizona.
106 E. 8th St. Los Angeles

Going East Via Los Angeles

and the Salt Lake Route through Salt Lake City is a desirable way. The service is excellent and an opportunity is given to see the metropolis of Southern California, the great orange district and the scenic attractions.

Reduced Fares to Eastern Cities

will soon be effective for round trip tickets. Better call on or write to L. A. Casey, General Agent, Salt Lake Route, 643 Market St., San Francisco, for all particulars. Going east from nearly all California points.

COSTS NO MORE Via the SALT LAKE ROUTE

anges, each of which totaled over 40,000 trees, as reported by Earle Mills from shipments into the county.

About 23,000,000 ladybirds have been sent by the State Insectary to Imperial valley to control the canteloupe aphid.

Largely increased watermelon acreage in Shasta county is reported.

No blight, but little scale, many worms and insects are noticed in Kings county. Winter plowing would expose these and millions would die.

Apples in Santa Barbara are now growing from blossoms produced last September. The same trees are in full bloom.

Fourteen cars of scabby seed potatoes were rejected last month by C. W. Beers, horticultural commissioner of Santa Barbara county.

Heavy grain on increased acreage in Placer county, and ideal fruit conditions are reported.

One hundred per cent prospects on Sonoma county berries is reported by Manager I. N. Cable of the Sebastopol Berry Growers, Inc.

Orange county reports beets 100%, hay and grain 90%, condition of orange and lemon trees 110%, through R. K. Bishop.

A query comes from Chico asking why, with no frost and only two light rains, and regardless of irrigation last year, three-fourths of the prunes have dropped.

Prunes, plums, pears, figs are not grown to any extent in Riverside county. Apricots are given as "bumper" by D. D. Sharp.

Small fruits are doing finely in Humboldt county according to G. B. Weatherby.

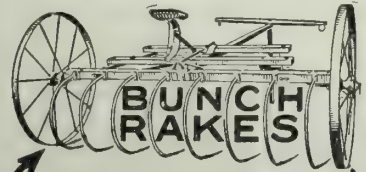
Ice in Kansas and 10° above zero in the Texas Panhandle, April 9, have hurt peaches and other fruit seriously.

C. R. McBride fears a very low crop of all fruits for Solano county. We hope he will feel more optimistic at next report.

F. C. Willson, of Santa Clara county, reports a light crop of cherries with Royal Annes yet doubtful. Prunes very light. Apricots reduced after heavy drop by rot. Fair fruit crops where orchards did not suffer from drought; very light where unirrigated last year.

New Horticultural Commissioner.

The matter of appointing a new horticultural commissioner to succeed F. R. Bloomer is to come before the Sacramento county supervisors this week. It is thought that Howard Kerchival, deputy to Bloomer, will be appointed to the position and that Fred Brosius will be his deputy. Both men have passed the State examination. Mr.



Shaw Bunch Rakes

Made especially for heavy work that no other rakes are fit for. Primarily made to bunch hay out of wind-rows, also to do any heavy work such as raking cornstalks, sage brush, etc. High wheels, rigid teeth, strong, rigid frame.

Descriptive Literature on Request
THE H. C. SHAW COMPANY
Manufacturers
56 N. CALIFORNIA ST.
Stockton, California

Bloomer will devote his time to the several fruit ranches he controls.

Parcel Post for Dairy Products.

Very fresh butter, eggs, and cheese are finding profitable local markets by parcel post, a difficulty, however, having been experienced by the setting of eggs of which only a part reached

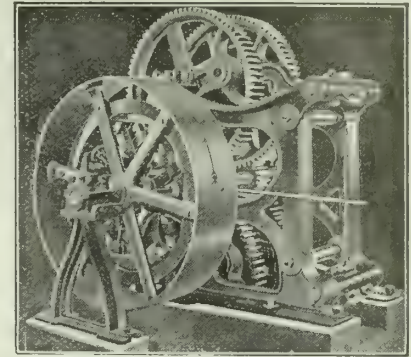
Florin with shells on, because the shipper economized on the packing.

New Cherry By-Product.

The San Francisco Chamber of Commerce is looking for growers or canners who want to sell clean cherry stems at about 7 cents a pound f.o.b San Francisco.

For Deep Wells

- give a maximum flow of water.
- no jerk, jar or vibration.
- low upkeep.



The Pumps that Put the "O. K." in "Work."

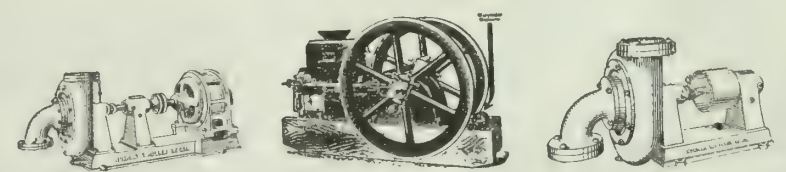
Through 12 successful years we have been making and installing Pomona Deep Well Pumps and we know that they will do the work for which built more efficiently, with less jerk and jar, deliver a greater flow of water for a longer length of time and at less cost for upkeep and repairs than any other pump. We ask the privilege of demonstrating these facts to you. If you cannot come to Pomona, we will be glad to have you write us for full information, stating the depth of your well and giving any other data that you wish.

POMONA DEEP WELL PUMPS

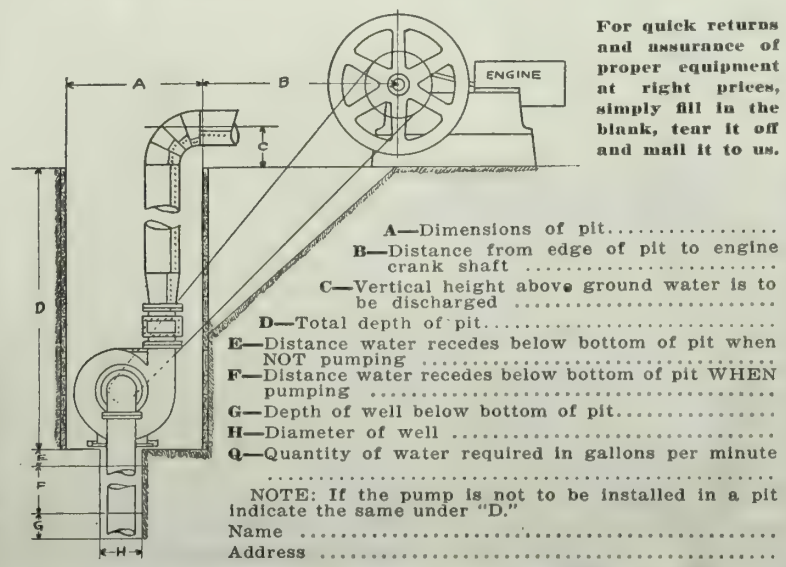
POMONA MFG. CO., Pomona, Cal.

We also make a complete line of gates and valves for cement pipe irrigation. Our special valve catalogue "P" will be sent free to any address upon request.

Power and Pumping Machinery



Direct Connected Motor Driven Miller Pump Armstrong Engines are a Quality Product at prices of inferior Miller Automatic Water Balanced Pump



Our Engines and Pumps are winners and you should have our Catalog.

NORMAN B. MILLER CO.

503 MARKET ST., SAN FRANCISCO.

Constructive Agriculture—No. 15.

Standardization of Fruit Packs.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

If you were a fruit eater, would you pay as much for a basket of peaches that looked nice on top, if you didn't know what sort of fruit lay underneath?

If you were an Eastern wholesaler or a retailer, would you not pay considerably more for a carload of fruit on every package of which the grower's label guaranteed its quality?

If you were the manager of a fruit

PROFESSIONAL DIRECTORY

SOIL LABORATORY

Analysis of Soils for Plant Food Values and Alkalies. Agricultural and Industrial Products. Water, Insecticides, etc.

CURTIS & TOMPKINS

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Hearst Building, San Francisco. Irrigation and Drainage, Land Examination, Agricultural Developments, Farm Improvements and Management, and Soil Surveys.

Beet Seed, Sugar Beet Culture, and the location of Beet Sugar Factories a specialty.

MILWAUKEE Mowers & Rakes

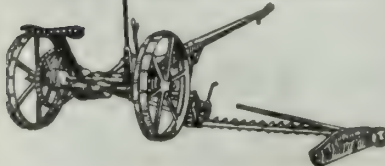
Made particularly for use where heavy cutting is required. The chain drive is the principal reason for the exceptional working qualities of the Milwaukee. No lost motion. The moment the wheels move the knife starts. Wheels are well lugged and there is sufficient weight to furnish abundant tractive power to cut a smooth swath in heavy clover, alfalfa, wild grasses or heavy weeds.

Send for Catalogue

The H. C. Shaw Company

Wholesale Distributors

56 N. California St., Stockton, California



shipping company in California, would you buy a miscellaneous lot of apples for the same price you would pay if they were packed in standard boxes and labeled?

If you were a grower selling big California plums to Eastern markets through some shipping companies of the State, would you rather accept less for all your plums than for some of them; would you like to pay part of the freight to the East for the mere pleasure of getting them off your hands? Wouldn't you rather take orders for them at staple prices like milling companies sell flour, or clothing wholesalers supply their trade?

EAST COULD NOT ORDER F.O.B.—There was a time not so far back when the Eastern trade could not know what they would get if they ordered a car of California fruit, so the growers and shippers couldn't get many orders. They had to ship to commission men, and the fruit was so variegated and variable that it often resulted in a "red ink" request for money to pay the freight because of poor quality or slight appeal to the consumer due to poor pack. Dishonest commission men saw here a chance to swindle far-away clients, and a grower who might send perfect fruit would also get red ink returns, his fruit having sold at highly profitable prices and the commission man having pocketed the proceeds by claiming what was too often true, that the fruit arrived in poor condition.

UNIFORM PACK HELPS F.O.B. TRADE.—That day is practically past, owing to standardized packing made possible by organization of some of the growers into local associations affiliated into the two large Exchanges, and by the affiliation of most of the shipping companies into the California Fruit Distributors' Association.

By united effort of majority numbers, definite rules of picking, packing, and grading can be quite well enforced, because use of the labels of such large organizations, on standard packs only guarantees the size and quality of such fruit to the Eastern buyers, who thereupon gladly pay higher prices than for unknown stuff.

The solution of the problem is not yet fully accepted by growers, neither is it fully worked out. But the standard-packed apples of the Northwest and California prove its profitability.

Watsonville apples now on the market are sound and plump, because none but sound apples were packed under their label. The Newtown Pippins and Winter Pearmain present an appeal to the appetite in their uniform rows of cleanly wrapped fruits in uniform boxes guaranteed by the labels of the growers; and just now there are more of them than of the Northwestern apples for sale here.

LABELING HELPS ADVERTISING.—Labeling large quantities of fruit under one grower's, or shippers, or association's name also gives a powerful opportunity to advertise that fruit and increase its consumption. Labeling, however, is of no advertising value unless the fruit is uniformly good. Newspaper and magazine advertising, novelty advertising, personal solicitation for business in a certain brand of fruit cannot be profitable unless that brand fulfils, year after year, the claims made for it. In fact, without standardized packing, advertising

merely impresses on buyers' minds the undesirability of that brand.

Not all the fruit producing sections of the State have rules for picking, grading, and packing. And where they do, improvements are still being made from year to year. And with most deciduous fruits, it is proving hard to get a uniform pack even with rules. Placer county has a good set, used by both the co-operative associations and the shipping companies. A card, about 10 by 14 is nailed up in each packing house in the district, entitled:

"RULES AND REGULATIONS FOR PACKING FRUIT.—According to Standard of Growers' and Shippers' Association of Placer County, California, April 6, 1912:"

Only one small change was made for 1913.

Peaches.

Good color and maturity, sound, no worms, sides of boxes sprung; 48-60, 60-72, 72-84, 84-96, all varieties, bottom and top layers to consist of same number and size, each box to be stamped with standard rubber stamp; 96-105, Triumph, Imperials, Alexander and St. Johns; crate, Triumph, Alexander, Hales Early, Early Crawford, Hulls Late Free, Imperials and St. Johns, 4x4, 3 tier.

Plums.

Free from worms, bruise or defect; sizes, 4x4, 4x5, and 5x5.

All varieties, in crates of 4 baskets, 2 or 3 tier to the basket. Every tier uniformly numbered.

With the exception that Climax, Wickson and Kelsey must be packed not smaller than 5x5 for top and 4x5 on bottom of basket. Each crate to be stamped with standard stamp.

Sizes 5x5 and 5x6 in the following only: Royal Hative, Clyman, Tragedy, Red June, Botan and kindred varieties.

Box packs, 84-96, 2 tiers admissible in peach boxes, wrapped and marked.

Apricots.

The grading of apricots will be governed practically by the same rule as applied to plums.

Pears.

Neatness and uniformity, free from worms, bruise or defect, to weigh not less than 50 pounds.

No pear in 4-tier pack less than 2 1/2 inches in diameter.

No pear in 5-tier pack less than 2 1/4 inches in diameter.

Half boxes may be packed with not less than 3 tier, no pear less than 2 1/4 inches in diameter, to weigh no less than 25 pounds to the half box.

Cover of boxes to be sprung. Each box to be marked with standard stamp.

Grapes.

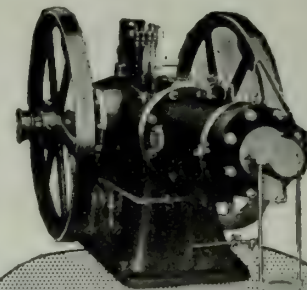
Full matured, carefully picked, properly trimmed, wilted at least 24 hours before packing; to be packed in crates 4 baskets to the crate, crates to be 4 1/4 inches deep with an 11-16th inch cleat under the cover; no stems in sight. Weight to be not less than 26 pounds, crate not to exceed 5 inches in depth inside measurement.

Cherries.

Solid pack or 9, 10, 11 or 12 rows across the end of box; all varieties; perfect condition, right degree of ripeness, neatly square packed double faced, no stems showing on top or bottom; all boxes to be marked with standard stamp.

Cartons, 4, 5 and 6-row.

Note.—To comply with the net con-



Muncie Oil Engine

10 to 80 H.P.
The only engine in these sizes successfully operating today in California on California Fuel Oil

Don't let the failures of other so-called oil engines prevent your full investigation of the Muncie

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IRRIGATION MACHINERY
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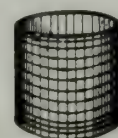
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I sell to the consumer Box shooks and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

R. F. WILSON, Stockton, California.

er law of New York, and other
es, all grape and plum baskets
t be stamped, "Net weight 5 lbs."
ENTRAL PACKING HOUSES NEEDED.—
conversation with D. R. King, of
California Fruit Growers' Ex-
change, the writer ventured the re-
mark that fruit packing is pretty well
standardized in Placer county.
Do you think," said he, "that pack-
ing is standardized when every man
picks his own fruit as in Placer
county?"
How about the differences in judg-
ment when applying good rules to the
actual fruit? And the chance for dis-
crepancy in packing where the grower's
name is not put on the package or
where the grower is a short-time
operator with no reputation in the East
sustain has resulted in so rank a
judgment as the packing of oak balls in
the lower layers of apples. Common
faults are the packing of wormy, in-
ferior, undersized or underripe fruit
where it cannot be seen. And it is
very hard to prevent this, for it is re-
peated even after the inspectors hired
by the Placer County Association have
expelled the guilty ones to repack
after load. Many of the ranches
are rented to more or less irresponsi-
ble parties and the owners cannot su-
pervise all of the packing. With all
this, however, it is seldom that poor
fruit is shipped from Placer county.
In the citrus industry, however, this
has been reduced to a minimum, though or-

ange growers are even now suffering
from lack of Eastern confidence be-
cause they sent frozen oranges a year
ago and because many of them ship
unripe oranges yet.
No grower in the California Fruit
Exchange packs his own fruit. It is
all hauled to the packing house of the
local association of which he is a
member and there packed by the same
men hired to pack all the fruit of
that association.

AN ORCHARD TRACTOR AT WORK.

[Written for the PACIFIC RURAL PRESS.]

Turning seven furrows at once in
the Flickinger Canning Co.'s orchard
near San Jose, one man with a 30-hp.
gas caterpillar pulling a disk plow is
doing almost as much work as four
men with as many four-horse teams
and gang plows would do. Three trips
down a row turned everything except
two rows across the end which were
imperfectly plowed in turning, and a
furrow or two next the trees previ-
ously plowed with horses. The turn-
ing ground will also be plowed by
horses.

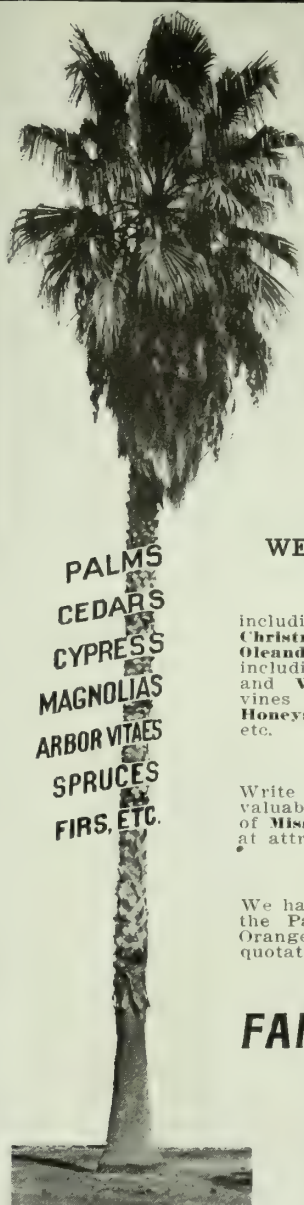
Here is how Manager L. F. Graham
figures: Sixteen horses cost \$8 per
day to feed, besides shoeing, harness,
veterinary attention, etc. Four men
cost \$8 more. The machine uses 20
gallons of distillate at 8 cents, and
2 gallons of cylinder oil at 16 cents,
and requires one man to run it. Re-
pairs come heavier, of course, and de-
preciation as well as first cost is great-
er; but during the months when it
is not in use, it costs practically noth-
ing, while the horses must be fed and
more men must be found when work
begins with the teams.

The tractor is used on all of the
250 acres of orchards, among trees
large and small, but horses are re-
quired to plow next to the trees and
across the ends. Long rows are desir-
able with the tractor, though it makes
a fairly good turn. Mr. Graham hopes
to cross-plow the whole place early
this spring after the first plowing, in
order to avoid any more irrigation till
fruit is off. With the tractor, he can
work two or three shifts a day, for
it never gets tired or overheated by
the sun's heat. Horses, however, are
being used for the plowing which the
one tractor will not cover for lack of
time.

The disk plows are doing first-class
work in the heavy stand of weeds al-
lowed to grow for humus, and every-
where on this ranch except on hard
gravel are esteemed far higher than
mold-board plows.

WATCH FOR CHERRY GUM- MOSIS.

Infectious cherry gummosis is re-
ported from Oregon, where Prof. H.
P. Barss, of the Agricultural College,
has been working on it some years.
"The disease starts out late in winter,
enlarging old cankers and becoming a
source of new infections." It is
caused by organisms which live over
winter in the discolored bark at the
edges of old cankers. The gumming
is simply incidental and is not always
noticeable, neither does gumming al-
ways indicate the disease. The only
remedy is to cut out all the bark and
wood close to the disease, taking
enough to be sure to get all the or-
ganisms newly working in bark not
yet discolored. Then wash with a 1
to 1000 solution of corrosive subli-



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Whether you wish to plant just a few
of these fine trees to ornament your
home grounds or whether you purpose
planting in a large way, it will be to
your advantage to get our quotations
immediately.

WE HAVE A SPLENDID STOCK OF ORNAMENTALS

including such fine evergreen shrubs as Box-Wood,
Christmas Berry, Euonymus, Laurels, Ligustrums,
Oleanders and Pittosporums; all the leading palms,
including Chamaecypariss, Cocos, Erytheas, Phoenix
and Washingtonias; fine climbing and trailing
vines such as Virginia Creeper, Trumpet Vine,
Honeysuckle, Kudzu Vine, Passion Vine, Wistaria,
etc.

OLIVES

Write for our special bulletin on the Olive, giving
valuable cultural directions. We have a fine stock
of Missions and Manzanillos which we are offering
at attractive prices.

CITRUS TREES

We have the finest stock of citrus trees grown on
the Pacific Coast. All the leading varieties of
Oranges, Lemons and Pomelos. Write us for
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Ask for our special prices.

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GEO. C. ROEDING, Pres. and Mgr.
Paid up Capital \$200,000.00.

5 YEARS EXPERIENCE IS
REPRESENTED IN A SE-
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CHOICE CLEAN CLASSY CITRUS TREES

All the leading varieties, buds
taken from our own tested or-
chards. Send for Catalog and
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Rhubarb for Profit.
A Free Book on
Rhubarb Culture
Free for the asking, \$1000
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Pasadena, Cal.
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HEMINGWAY'S
LEAD ARSENATE
EASY TO MIX
STAYS IN SUSPENSION
HIGH ANALYSIS
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Full stocks carried by Coast Agent.
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Hemingway & Company, Inc.,
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Canvas Irrigating Hose

"WE MAKE IT BY THE MILE"

1 3/4 to 13 Inches in Diameter
Plain or Coated

Fumigating Tents

Made of best grade of Army Duck or of
Special Drilling

ANY SIZE TENT ANY SIZE ORDER

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138-42 South Main St., Los Angeles

mate prepared under directions of the
druggist who sells the tablets, and ap-
ply pruning paint or white lead mixed
with raw (not boiled) linseed oil.
Close watch through the spring and
summer for new cankers or blighted
spurs and twigs will probably reveal

some to be cut out. Always dip cut-
ting tools in the sublimate solution,
which is deadly poison to bacteria and
human beings.

The disease on twigs and branches
is easily handled without great loss
by cutting them out.

With the Live Stock Men.

A. M. Henry, of Farmington, reports that his boar Orient Chief was recently killed by another boar, and that he has been compelled to purchase a new one in the East to take his place. He also says that he has found this year's demand more than he could fill, with the result that he has been, and still is, behind with orders.

Dairymen in the vicinity of Corcoran, have purchased the business of the Tulare Co-operative creamery and the Lakeview creamery. It is planned to combine the two and to sell sweet

cream to the Los Angeles market, as a good price has already been contracted for during the next year.

In a letter to this office from Dala-van, Wisconsin, Malcolm H. Gardner, superintendent of advanced registry for the Holstein-Friesian Association, states that the cow, Queen Piebe Mercedes 154610, has broken the record for fat production in the senior two-year-old class of both the seven-day and thirty-day divisions, by producing 23.868 pounds of fat in seven days and 93.388 pounds of fat in thirty days.

A movement has been started by the Chambers of Commerce in Santa Cruz, Monterey, San Benito, and Santa Clara counties to promote the interests of better bred live stock.

A report from Winnemucca, Nevada, states that practically the entire year's crop of wool in that section has been sold at 11 cents a pound, but that during the past few weeks the price has been raised to 14 cents.

What is said will be the best privately owned dairy barn and equipment in Yolo county is being constructed by G. Allison Jordon, of Woodland, who plans to have a sanitary plant in all respects.

A meeting was held at Williams, Colusa county, recently by dairymen who are interested in forming a co-operative creamery.

John Lynch, the Short-horn breeder of Petaluma, recently shipped several registered bulls to the Stanford ranch, at Vina.

The registered Holsteins sold at auction at Modesto last week brought fairly good prices, according to reports from that place, the cows averaging about \$300 and the bulls about \$120.

Two bunches of cattle were shipped to San Francisco last week from Winnemucca, Nevada, having been brought in from the Rebel Creek district.

Reg. Poland China Pigs

For sale from our prize winning stock—the prolific kind. Both LARGE AND MEDIUM TYPE. Either sex. Price \$2.50 up. Guaranteed as represented or money refunded.

W. A. YOUNG, - - - Lodi, Cal.

BLACK LEG

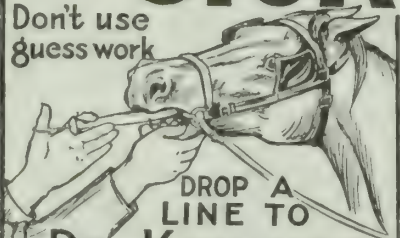
LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Laxative, fresh, non-toxic, rendered by Western scientists, because they protect where other vaccines fail. **10-dose pkg., Blackleg Pills \$1.00** **50-dose pkg., Blackleg Pills 4.00** **Cutter's Blackleg Pill Injector 1.50** **1 - dose Injector, 10 - dose Injector and 50 - dose Injector 1.50** **Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct.** **Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (out of date) as it attacks less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O. we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.**

BLACK LEG VACCINE

FOR THOROUGHBREDS, should be, for greater safety and protection, the "double" form. No. 1 dose, slightly weaker than regular vaccine, is safe to use on thoroughbreds, and prepares them for No. 2 dose, which gives full protection. **Cutter's Blackleg Pills, Double, \$1.50 per pkg., 10 double doses, are given exclusive preference by California breeders of thoroughbreds. Insist on Cutter's. If unobtainable, order direct. Send for booklet. The Cutter Laboratory, Berkeley, Cal., or Chicago, Ill.**

When any of your STOCK are SICK

Don't use guess work



DR. KORINEK IMMEDIATE ADVICE FREE GIVEN ABSOLUTELY FREE

In the meantime write for Dr. Korinek's List of Remedies for all the known ailments of Horses, Cows, Pigs, Sheep, Dogs, Cats and Poultry, its free.

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Make Barn Work Pay Profits!

DON'T spend wages over and over again for work that Star Barn Equipment will do for a lifetime on a single investment. The saving in wages, work and time wasted, pays the cost of installation the first year. After that you get free all the advantages of a cleaner, more sanitary, better kept barn. Let us prove our claims by mailing you our big, handsome catalog. No expense, no obligations.

STAR Stalls and Stanchions, Litter and Feed Carriers

The most comfortable, durable, and in the end the most economical Stalls and Stanchions made. Built in Units. Get one or a dozen as you need them. Let your Equipment grow with your herd. The Alignment device keeps cows lined up at the gutter, keeps them clean and comfortable, makes it easier for you and for the help.

Giant Star Stanchions have labor saving, one-hand lock that stays locked. Patented Lock Guide—Sure-Stop—Instant and easy adjustability to all neck-widths, smooth wood lining firmly held in a "U bar"; these are a mere few appealing Star features that should make you insist on Giant Star Stanchions.

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Get our big, instructive catalog—sure! When you write, if you are remodeling or building a barn, sketch out a rough floor plan and send it along. We'll send you a specially made blueprint that will be a big help. No obligation incurred. We are helping farmers everywhere, let us help you. Write to-day for 100 page book free.

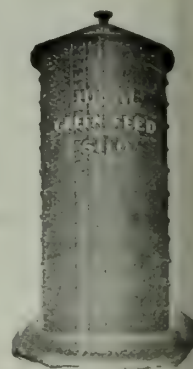
Pacific Dairy Machinery Co.
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The speediest, easiest raising and lowering and most trouble-proof carrier on the market. Roller bearing throughout.

Tremendously popular because of patented exclusive labor saving features. No matter how your Stalls and Gutters are arranged, there's a Star Litter Carrier just the thing for you. Our new patented Curves and Switches make Star Litter Carriers practical everywhere.

Six different styles and types. Made for Rod and Rigid Track. The Star Swinging Boom does away with posts and supports in the barnyard. Learn all. Star Goods pay cost the first year. Let us prove it.

Silo Facts



A silo must be absolutely air-tight to produce good ensilage and should be so constructed that it will continue to be air-tight after the first filling.

Non-conductive of heat and cold.

Economical to erect and maintain.

Strong and rigid to resist weather conditions, and easy to operate.

All necessary features for the operation and maintenance of a perfect silo are incorporated in the Ideal Green Feed Silo.

Buy an Ideal Green Feed Silo now and fill it with your first cutting of alfalfa. Then plant corn to fill it again this fall, insuring yourself against burnt-out pastures this summer and the high cost of feed that will be necessary to buy next winter.

Write for catalog B for full information.

Ensilage Cutters and Alpha Gasoline Engines.

DE LAVAL DAIRY SUPPLY CO.

Drumm and Sacramento Sts.,
San Francisco, Cal.

1016 Western Ave.,
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PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.

Gombault's Caustic Balsam

The Worlds Greatest and Surest

Veterinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
THRUSH,
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SKIN DISEASES,
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BONY TUMORS,
LAMENESS FROM
SPAVIN,
QUARTER CRACKS,
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POLL EVIL,
PARASITES.

REMOVES

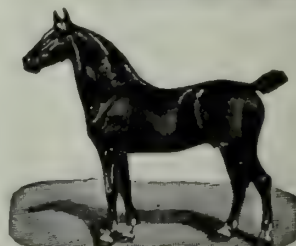
BUNCHES or
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SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made. Every bottle sold is warranted to give satisfaction. Write for testimonials showing what the most prominent horsemen say of it. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard
VETERINARY REMEDY

Always Reliable.
Sure in Results.



None genuine without the signature of
The Lawrence-Williams Co.
Sole Proprietors & Distributors for the U. S. & CANADA. CLEVELAND, O.

NOTHING BUT GOOD RESULTS.

Have used GOMBALT'S CAUSTIC BALSAM for more than 20 years. It is the best blister I have ever tried. I have used it in hundreds of cases with best results. It is perfectly safe for the most inexperienced person to use. This is the largest breeding establishment of trotting horses in the world, and use your blister often.—W. H. HAYMOND, Prop., Belmont Park Stock Farm, Belmont Park, Mont.

USED 10 YEARS SUCCESSFULLY.

I have used GOMBALT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb, ringbone, capped hock and knee, bad ankles, rheumatism, and almost every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and certainly can recommend it.—C. C. CRAWER, Training Stables, 890 Jennings Street, New York City.

Sole Agents for the United States and Canada.
The Lawrence-Williams Co.
TORONTO, ONT. CLEVELAND, OHIO.

Market Outlook for Butter and Cheese.

Written for the PACIFIC RURAL PRESS
by R. E. HODGES.]

Reduction of the tariff on butter from 6 cents a pound to 2½ cents opened California markets to the steady influence of the world supply. Whatever else is predicted, we will not have the extreme high prices of the past. Nor, as estimated by W. I. Roussel, former president of the San Francisco Wholesale Dairy Produce Exchange, is the price likely to go below 21 cents. Formerly cold storage alone stood in the way of extremely high prices at seasons of light production, or of the dumping of products in times of flush supply. Now, we of California are directly concerned with the butter from Australia and New Zealand. Of this, coming only since the duty was lowered, the following amounts have been received, as taken by H. B. Mills, of the Chronicle, from the shipping manifests of the importing boats when they arrived at San Francisco:

From May, 1912, through August, 1913, test shipments amounted to 63,809 pounds. In October, the real importations began with 104,200 pounds; November, 345,840; December, 281,084; January, 749,454 pounds. About 5100 pounds were received in February and shipped direct to New York. Ten thousand pounds came in March, of which 8000 was transhipped to Seattle. This was in October, roughly one-fifteenth of the total receipts, November, one-fourth, December, one-sixth, and January over one-third. The New Zealand supply is described as "unlimited."

Though the distance from Australia to London is about twice as far as to San Francisco, the freight on butter to London, according to the Union Steamship Co., is 1¼ to 1¾ cents, according to the amount shipped, while the rate to San Francisco is 2 cents per pound. We import in quantities of 1 to 50 tons, while London imports 100 to 1000 tons per shipment.

Our availability to Australia and New Zealand and their anxiety to supply us will make their butter act as a "balance of power," going to whichever market will pay the high price, and tending to base the price of our own butter on the world's supply and demand, making it more stable.

This is more true since the Australian government is encouraging settlers to the extent of offering reduced steamship fares and large loans of money on long time at low interest to bona fide settlers who have enough capital to make them responsible.

More than this, Australians are going to be extremely careful as to the quality of the butter they export, their only disadvantage in competing with our fresh extras being the three weeks voyage. This, however, does not necessarily injure the freshness of its flavor, as the steamships have the most perfect refrigeration possible.

On the butter storage business, Australian butter will have an indirect effect. Harris & Smith of San Francisco are even now in communication with foreign agents who say they will put butter on the San Francisco dock at 26 cents a pound if necessary. Since their flush season comes at the time our storage butter is coming out, the

man who stores butter will figure on selling it at a cent a pound less than 26 to 28 cents, as estimated by different dealers to be the Australian cost price on San Francisco docks.

Storage, insurance, and interest amount to 2 cents a pound; storage butter must sell about 25 cents; if the dealer who stores breaks even he must buy at 23 cents; if he makes a profit, the buying price must be still less on account of Australian butter.

If the price doesn't get less than 23 cents in our flush season, not much can be stored, and we will depend on Australian butter for fall and winter. If it does go less, more will be stored, to sell at about 25 cents.

Australian butter is not likely to be stored to compete with our fresh product unless the price of fresh butter on Exchange in our flush season seems likely to stay above 30 cents.

So there is likely not to be a great fluctuation in prices through the year and our butter will have to compete with the foreign product by meeting their prices or by making a better product, always with the advantage of three weeks in freshness. There are few dairymen in California who cannot make money if these prospects materialize.

CHEESE OUTLOOK FOR OUR PRODUCERS. —"If I had fifty cows on a ranch, I'd put in a 4-horsepower engine, some cheese vats, hoops, and a curing room—wouldn't need an expensive building—and I'd make cheese rather than butter," said a prominent wholesale dealer.

California fresh cheese is in a class by itself. It cannot be shipped far out of the State or kept long, but there is consumption in the State for all that is produced. Dealers differ as to the advisability of enlarging the California fresh cheese output, but there seems to be no reason why our coast range districts should not go more into the cheddar process. Receipts of all kinds of cheese in the counties touching the bay were 9,500,000 pounds in 1911, nearly 12,000,000 pounds in 1912, and over 9,000,000 pounds in 1913. Only a little of this was California fresh. The rest was Oregon and Eastern cheddar.

Some of our butter-fat producers are taking needless alarm and are seeking other ways to dispose of their milk. Here is their chance.

Community cheese factories can be run more economically than ranch factories—if fresh cheese seems to exceed the demand, cheddar can be made. But California's population is about to grow faster than it has in half a century, here is an expanding market at home.

Comparing profits from sale of butter-fat with those from sale of milk for cheese:

California butter is now about 23 cents—allow 25 cents for butter-fat. With the same milk, two pounds of California fresh cheese can be made, the market price of which now is about 31 cents. This difference of 6 cents a pound for butter-fat would be only slightly lessened by the difference between the whey and skim-milk returned to the farm.

If a dealer regularly makes 1 cent a pound on butter, he will soon be prosperous enough to retire. Why shouldn't the rancher make 6 cents?

California-made butter is not likely to be much higher, but the cheese,

DE LAVAL CREAM SEPARATORS

are the cheapest
as well as the best

LOOK AHEAD!

DON'T TRY TO SAVE \$10.00 TODAY IF IT MEANS A loss of 25 cents a day for all the years a cream separator may last you.

THAT'S JUST WHAT YOU WILL DO IF YOU BUY A cheap or inferior separator simply because its first price is a little less than that of the De Laval.

WHEN A PRUDENT MAN BUYS A CREAM SEPARATOR he knows that what he is really paying for is not just so much iron, steel, brass and tin, whether it is called a separator or not.

WHAT HE WANTS IS A MACHINE TO perform a certain service, and he must be sure of the machine doing the work for which it is intended as thoroughly and with as little effort and care as possible on his part.

THOUSANDS OF BABCOCK AND OTHER tests have proved that the De Laval skims closer than any other cream separator under any conditions and particularly under the harder conditions always experienced at times.

JUST THINK WHAT A loss of as little as 10 cents worth of cream at each skimming means to you in a year—twice a day for 365 days—over \$70.00, and with as many as ten cows the cream losses alone from an inferior separator usually amount to more than this.



CREAMERYMEN, WHO ARE DEPENDENT ON THEIR SEPARATORS for business success, have long since found out the difference between De Laval and other separators, with the result that De Laval factory separators are almost universally used the world over today.

DE LAVAL SEPARATORS ARE IDENTICAL IN ALL SIZES, FOR one cow or a thousand, and the differences between separators are just the same with the smallest machine and the largest. They mean as much relatively to the little as the big user.

THEN THERE IS A SAVING IN LABOR BECAUSE OF THE EASIER running and greater capacity of the De Laval over other machines and the less care required in cleaning and adjustment, worth at least 10 cents a day.

AND THERE IS THE INDISPUTABLE FACT THAT A DE LAVAL machine lasts from ten to twenty years as against an average of from two to five years in the case of other separators, or five times the average life of competitive machines.

THESE ARE THE REASONS WHY DE LAVAL SEPARATORS ARE cheapest as well as best, why thousands of other machines are yearly being replaced with De Laval and why their use is rapidly becoming as universal on the farm as in the creamery.

IT SHOULD BE REMEMBERED, MOREOVER, THAT IF FIRST COST is a serious consideration a De Laval Separator may be bought on such liberal terms that it will actually save and pay for itself, as many thousands of them have done.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agent simply write the nearest main office, as below.

DE LAVAL DAIRY SUPPLY COMPANY

165 Broadway NEW YORK 101 Drumm Street SAN FRANCISCO 1016 Western Avenue SEATTLE

50,000 Branches and Local Agencies the World Over.

with proper education of the public taste, is more than likely to go higher. Alfalfa cheese is out of the game on account of flavor and gas. Production is likely to be restricted to pretty well settled communities where

other forage is plentiful. With restricted production, more economical methods, and a fast growing cheese-eating population, it looks as if the dealer's desire to make cheese might be justified.

Dairy Hope in Breeding and Sanitation.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Discouraging market conditions are such a new thing to California dairymen that the present eruption in our butter market is having the effect of throwing the producer into a state of apprehension, not thought possible two years ago and seldom spoken of a year ago.

Brought face to face with this new problem, there seems to be a vast difference of opinion relative to the final outcome, but all seem to be agreed that the cause is imported butter. Being such a new and unknown of factor it is only natural that the remedy has not as yet been satisfactorily worked out and it is confidently predicted that it will be some time before we may expect the situation to right itself.

NEEDS OUTLINED.—If butter alone were cheap and hay high we might expect some relief through a smaller production, but the opposite is true at this time and instead of retarding the production there is every promise of this year being the banner one in the amount of butter made, and so it will be seen that the industry is up against conditions that demand immediate steps, on the part of the dairyman.

Better informed dairymen in almost every district have concluded that there is only one manner in which they can successfully combat the new situation and that is better dairy practices, for they have satisfied themselves that under present tariff regulations there is little hope for any improvement in our markets of the future, over those being experienced at the present time.

Better dairy practices, according to their views, means a more thorough understanding of the principles of good farming, that a higher yield of feed may be secured from a given acreage, better bred cows that will be more capable of manufacturing the increased yield of feed into more butter fat, and lastly a more sanitary manner of handling the cream from the cow to the creamery, that a higher and more uniform grade of butter may be sold to the consumer. This last condition is essential if we are to compete with the quality of imported butter at home, and even more necessary

if we are ever to attempt exporting, a thing which is almost sure to happen in the near future.

FEEDS A FACTOR.—To anyone who has seen the progress made in raising and caring for feed in all of our larger dairy sections it must be admitted that through the rotation of crops, fertilization, and a more thorough knowledge of the feeding value of different crops, a great many dairymen have been able to realize a larger profit from their land than was heard of a few years



Jersey Bull "King's Valet" Owned by N. H. Locke, of Lockeford.

ago, and for that matter, more than is generally realized at the present time so there seems to be room for a great deal of improvement along this line.

Through the use of silos, feed cutters, and the like, this feed is also being brought to a more efficient and economical state for feeding purposes, a feature which will allow, and which is now undergoing, a vast amount of development.

BREEDING IMPORTANT.—The part that better bred cows hold in the general scheme is the same that they have held under past conditions, the only differ-



Guernsey Don Adonis of Linda Vista: A. B. Humphrey, Mayhews.

ence being that it is now more imperative than ever for the dairyman to keep high producing animals.

Examples of this are daily seen in all dairy sections; for those who have in the past built up their herds, now feel secure, whereas the man with nondescript cows is already balancing on the brink of uncertainty as to what he will do if an improvement in prices is not made soon. An instance of this was recently seen where an owner was milking 25 cows that averaged 300 pounds or more of fat last year. Such herds are of course far above the average in production. Yet it has been only four or five years since the owner was no better off than his nearest neighbor now is, who has just sold his herd because they wouldn't pay at present butter prices.

"How was this accomplished?" we asked. "First through the use of registered bulls that were good individuals and had some butter fat records back of them, and next through a rigid culling, made possible by the use of the scales and a Babcock tester."

Another herd visited, where 110 cows were being milked, showed by the last test that the average for March was 27.5 pounds, per cow. Just

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Phone 471-J.

started some time ago, when a grading system was proposed; but did not meet with widespread success, due it is said, to the fear of competition. The experience with export butter for one year has, however, demonstrated to the manufacturers' satisfaction that the practice of buying and handling poor cream is at the bottom of most troubles of their own, as well as of the dairymen's.

The result is that the grading system has again been taken up and the cream is to be put into three classes, A, B, and C. Many will not accept the C grade at any price and will offer enough of a premium for A grade, over B, to pay the dairyman for better handling. These grades are made according to the test of the cream, for butter fat content, and the acidity test. The latter named condition is where most dairymen will encounter troubles, for unless precautionary methods are taken at once there will be a large portion of the cream, that will be classed in the poorer grades, the result being that the dairymen will suffer still more in the price received than is now the case.

Experience is very often expensive but it appears that the lessons now being taught will in the end benefit the industry as a whole, even though it is now working a hardship on many who can least afford to stand the burden, and we find the better dairymen are confident that the dairy business will be on a more sound financial basis in the future than it has ever been in the past.

BLOAT TROUBLES.

To the Editor: I have some cows and am much troubled by having some of them bloat. Will you tell me through your paper, what causes bloat and what is the remedy, also a remedy for warts on the teats of cows.—J. H. T., Elmira.

Bloat is liable to occur when cattle are pastured on alfalfa, especially if the growth is rank and seems to be greater when the pastures are wet with dew or rains or when frosted. It is caused by fermentation which distends the pauch or rumen with gas which does not readily escape and unless taken care of at once usually proves fatal. Below you will find some very good advice as to what measures to take after bloating has started. You will find in our issue of April 4, page 431, an answer regarding warts which will apply to warts on the cows teats as well.—EDITOR.]

HOW TO RELIEVE BLOATED COWS.

[Written for the PACIFIC RURAL PRESS by W. D. GUTHRIE.]

There are a great many people that will have serious experiences with bloat later in the season and for that reason it may be well to point out several ways by which a bloated animal may be relieved.

In most cases it will not be necessary to stick the animals as the more simple remedies may oftentimes be used to bring relief, such as taking a stick, two inches in diameter, and 10 inches long, daubing it with tar and tying it in the animals mouth. This causes the cow to work her tongue and that helps to start the working off of gas. Exercise is splendid, standing the animal with its front feet higher than the hind feet also helps.

Two tablespoonfuls of soda and one pound of Glauber salts dissolved

in water and drench has been used with good results. Throwing cold water on their sides is recommended by some stock men.

Dr. Roadhouse of the State University, recommends a tablespoon full of Aromatic spirit of Ammonia, mixed in a quart of water and drench as the best remedy, taking two or three handfulls and shoving it into their mouths, making them eat it.

If, however, the animal is in serious condition, is standing with her feet spread apart as if to keep from falling, her eyes staring, mouth open and panting it is time to stick, and be quick about it. For this work the trocar is best and may be obtained at practically any hardware store. If a number of cattle are kept it is better to have two or three of them on hand. Keep them in a convenient place, so they may be found instantly, when the occasion demands their use.

The proper place to stick is on the left side, half way between the point of the hip on the last rib, about three or four inches from the Lumbar Vertebrae. At this point there is absolutely no danger of killing the animal. The writer has always found it more convenient to stand on the right side of the cow, reaching over the back and sticking inward and downward on the left side. Then remove the knife, leaving the shield in until the gas has escaped.

In absence of the trocar an ordinary knife may be used, but it has to be used with more care. The knife should be turned edgewise in the wound to keep the hole open and should not be removed until all of the gas has escaped. After relief be sure to disinfect the wound thoroughly with some good disinfectant.

It is a good idea to have a number of sticks, with ropes attached, hanging up handy, to be used at a moments notice, also some of the other remedies that have been mentioned. It is not advisable to stick unless absolutely necessary, as results show that it is hard on the animals.

ANGUS CATTLE EXPERIMENT

[Written for the PACIFIC RURAL PRESS.]

What promises to be a distinct innovation to stock-raisers of this State is the importing of 1500 head of Polled Angus cattle from Texas to the ranch of the Tagus Ranch Co., near Tulare. This is the largest shipment of pure-bred Angus that has ever arrived in California, and the method proposed to handle them is also entirely new for this State.

All of the stock is under a year of age, all but the 400 females being steers.

Besides 3,000 acres which will be planted to alfalfa at once, several thousand acres of good pasture lands are owned by the company. It is the plan to raise the stock on the grazing land and fatten them on alfalfa and silage.

This beef stock will be run in connection with a large herd of Holstein cattle, and it is proposed to take the beef breeding cows that have the best dairy type and handle them along with the strictly dairy cattle. Calves from this stock will be turned out with the other Angus cows, which are poorer milkers, but some of which will in this way raise their own and other calves.

Whether the proposition will work out as planned, remains to be seen, but this and other experiments of a like nature, now being carried on in

this State, seems to indicate that the time is not far distant when the number of beef cattle seen in our larger valleys will be materially increased in number. One thing is certain—a finer lot of stock was never brought into the State than those seen in the first shipment to this ranch, and much valuable data should be obtained at that place during the next two or three years.

J. C. L.

Tom Gibson, the well known stock breeder of Woodland, reports that the sale of Short-horns recently held at the Union Stock Yards, at North Portland, was a big success so far as prices were concerned and that a number of the larger buyers were California men, he himself having purchased a bull to use on his registered cows.

Live Stock Directory

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SWINE.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

PURE-BRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson Fresno.

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FRANK MECHAM, Petaluma, California—Breeder Shropshires, Ramboulllets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

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CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

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"Sleeps" and "Eats" for Hens.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

SIZE OF POULTRY HOUSE.—This is a question that bothers many that are about to build a poultry house. In the first place it is well to remember that poultry are like all other live stock, a few in a large pen will do better than a lot, in the same size pen. But as we can't all give lots of room and must economize in space, we must have some rule by which to know just about what is right. A flock of fifty hens should have about five square feet of floor space per hen. This is under ordinary conditions where the poultryman will clean out occasionally. Where the poultryman is careful and cleans out every day, keeping his floor space well littered and having dropping boards above the floor fifty hens can be kept healthy and in good laying condition on half that floor space.

In a large pen say 20x20 one hundred hens can be kept in better condition than fifty can in half the space, and the reason why is that each hen has the whole 20x20 to range over when she wants to. Now if this pen is kept clean with plenty of fresh litter, and dropping boards are used with absorbents on them, open front and three closed sides, this will make an ideal place for layers—breeders should never be put in such large lots together.

This may look a little contrary but you will readily see that as the number of hens increases and space is somewhat restricted, it is still more space because as pointed out the hen individually has range of all the space allotted to the whole. You could not possibly keep one hen in a space 2x2 but keep on increasing the 2x2 and you give each hen more room. But always give all the space possible anyway; that is the soundest policy because it saves extra labor and is more conducive to health. Intensive poultry farming requires absolute cleanliness and watchfulness, or sickness and disease will creep in.

SOFT SHELLED EGGS.—All the authorities claim that there is a cause for soft shelled eggs, and while one may be wrong it does not often happen that all are wrong, so the cause of this very annoying fault should be looked for and then removed. I have a neighbor who raises Black Minorcas; and he says they always lay soft shelled eggs in such quantities that he is con-

sidering getting rid of them, he appears to think that Minorcas have a monopoly of this trouble.

As he happens to be a man that "thinks he knows it all," I never contradict him, but by questioning him I find that he does not feed enough shell making material for a breed of hens that lay quite a number of eggs and large eggs at that. He feeds no bone, considers it unnecessary, no oyster shell, because his land is sandy, yet his hens are penned up, no grit, hens don't need it, no dry alfalfa in the mash, because he feeds other green feed fresh.

Now we see that this man deprives his hens of the very best shell making material and then blames it to the breed. That is all nonsense, but as he pays the piper it is none of my business.

I am keeping fifty Black Minorcas and out of those fifty I get an average of thirty-five eggs a day. They have kept it up since November last, and only one soft shelled egg has been dropped.

So I believe the trouble with the small breeds when they lay soft shelled eggs may be traced, in most cases, to a lack of shell making material. With the heavy breeds the cause is more likely to be too much fat. When fed too much mash so that hens can satisfy their hunger without much exercise, the heavy breeds soon put on a surplus of fat, and as the fat first attaches itself to the internal organs the poultryman does not notice it until the mischief is done.

Anyone keeping the Rocks, Wyandottes, Orpingtons, and Rhode Island Reds should make it a rule to pick up the hens at intervals and grasp them by the abdomen. If it feels soft and flabby the hen is too fat but if it feels hard and muscular the hen is in good laying condition. Plenty of exercise and less mash is the remedy for this trouble; and as in the case of the others, plenty of shell making material should be served to the hens.

USE SWINGING PERCHES.—Up to date poultrymen use a much better system of perching than used to be in vogue. A few old mossbacks still keep hens on an old ladder perch where the top fowls muss up the lower ones and where every night there is a struggle for the top rungs of the ladder and some are knocked to the floor.

When the perches are all of the same height, same thickness, and color there is nothing to fight about and the fowls go quietly to bed, provided they have room enough.

The very best perch is made of Oregon pine; made in a frame bolted together at the four corners and fixed so that the man who cleans out the house can pull the frame up by a pulley and have the floor to himself during the operation of cleaning. Make the frame just about four inches smaller than the size of your house, bolt the corners, drive nails lightly in the side bars two inches apart, where each perch is to be laid; these nails are merely to hold your perches in place when the hens are going to bed.

Now fasten a good stout wire at each corner of the frame and carry the wire to the roof or ceiling of your house. About two feet from the floor is the right distance for the heavy breeds and three or more for the light breeds. The perches are now so fixed that they will swing, and swing clear of all walls so Mr. Mite is up against his first

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S. C. WHITE LEGHORNS—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected hens, bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

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FREE—66-page catalogue, describes 1 detail prices, etc., on 19 kinds of baby chicks, hatching eggs, incubators, brooders, etc. We ship everywhere. The Pioneer Hatchery Co., 112 E. St St., Los Angeles, Cal.

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FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

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problem. By painting these perches once a month with some good lice killer he is knocked out of business because he can't reach the chickens and unless he gets blood he can't live a very long life.

Now fasten a small pulley in the roof just above the front perch and put a piece of clothes line through it. When you want to clean out pass the rope under the front of the frame and hoist the whole thing out of your way. This gives room for the attendant to spray, clean out, or do any work necessary. If room is precious, nests can be made under the perches for the heavy breeds but of course they must be covered nests, and for the light breeds a row of nests could be made above the perches, these would keep clean while the lower ones would most likely get dirty unless the house is cleaned out every day.

This kind of perches gives satisfaction to both hens and the owner. You can go to bed knowing that your hens are resting on an up to date "lice proof" perch, the best perch known to the poultry fraternity.

FEEDING THE LAYERS.—Since poultry feeding has become more of a science than formerly there have come into use a great many terms that are not fully understood by many people who keep just a few fowls; yet it is always best to keep posted on what advance is being made in the world. Nearly all feeds now are marked with the quantity of protein contained in the hundred pounds, and unless we know the meaning of the word the printing on the sack does not benefit us a bit.

Protein is a name applied to mixtures or complex substances contain-

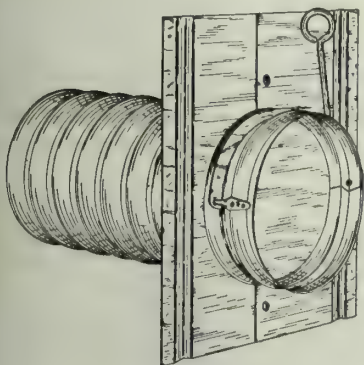
ing nitrogen. It is a food constituent that is necessary in all rations as it enters very largely into the making of eggs. The animal protein comes from lean meat, fish, blood, bone, and milk. Vegetable protein comes from alfalfa, soy bean meal, oil cake meal, and perhaps cocoanut meal. But while the vegetable protein is good, so far we have not found that it can take the place of animal protein. "Carbohydrate" means all the starchy foods and sugars; they make up the bulky part of the ration, their purpose is to furnish energy and heat to the body. Part of them may be converted into fat and stored away for future use. In point of fact they serve the purpose of fats if the fowls are not fed any oily substances.

BALANCED RATIONS.—A ration is the amount of feed given or allowed for each hen or flock during 24 hours which constitute one day. This means a ration well proportioned in the carbohydrates, the vegetable and animal proteins, and the minerals, fats, etc., to maintain the hens during the 24 hours, and furnish the material for egg making. Egg laying ration means the same thing; it is composed of a sufficient quantity of each material to produce eggs with the least friction to the hens anatomy. But when you buy a sack of what is called egg mash, don't expect that it means your hens don't need anything further; they do; and if they don't get it you will soon be coming from the nests with an empty basket. The egg mash may be properly balanced but unless the hens are fed whole grain, green feed, and things which help make a variety, the ration for the day is not a balanced ration.

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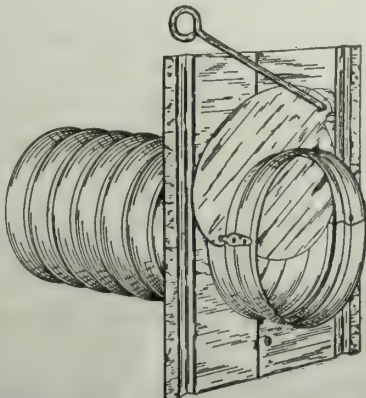


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The Home Circle.

Dried Apricot Marmalade.

Four pounds of dried apricots, three pounds of sugar, cold water. Select, if possible, large fruit. Wash thoroughly and soak for twenty-four hours in enough water to cover. Turn apricots into preserving kettle and add the sugar, together with one pint of water. Cook very slowly until reduced to a marmalade, stirring occasionally during the cooking process. It is well, in cooking any such mixture as the above to stand the kettle on an asbestos mat so as to temper the heat. An excellent plan, in making marmalades or heavy jams of any kind, is to put eight or ten ordinary marbles into the preserving kettle with the fruit. These will roll about the bottom of the kettle while the cooking is going on, and will prevent the contents burning.

Good Creamed Dried Beef.

This is a dish that can be very good, but is usually rather tasteless.

Many cooks put water on the beef, bring it to a boil and turn it off. There is a better way, which retains all the flavor of the beef and yet does not make the dish too salty. Pick over the beef and squeeze it a little in warm water. This removes enough salt. Fry it in hot butter until it is

a nice brown, then turn in the milk, or preferably cream, and thicken in the usual way with flour, first mixed with a little cold milk. The quantities depend upon individual taste. Usually with a half pound of beef a quart of milk would be used, taking about two level tablespoons of flour.

Apple Jelly.

Apple jelly may be made at any time during the winter, and, if spiced, it will be found a great improvement over the ordinary variety. To the apples add vinegar in the proportion of one cupful to each peck of apples, and a bag containing equal parts of whole cloves, cinnamon sticks and whole allspice. Use one-quarter pound to the above quantities of apples and vinegar. Proceed as in making apple jelly, boiling the spice bag a second time with the clear juice. The jelly will be clear, of good color and delicious flavor.

Spiced Figs.

Buy the loose figs rather than those which have been pressed, though the latter may be used if the others are not to be had. If the dried figs are used, it will be necessary to soak them overnight in warm water to plump them. Make a syrup of 1 cupful of vinegar, 1 1/4 pounds of brown sugar, 6 sticks of cinnamon, broken in short pieces, and 1 heaping tablespoonful of whole cloves. Let the figs simmer slowly in this syrup for one hour, then pack in glass jars or a crock and cover with the syrup. These are delicious served with cream cheese and wafers.

Hot Cross Buns.

Sift together one quart flour, half teaspoon salt, one cup sugar, three scant teaspoons baking powder, half cup butter, half pound cleaned currants, half teaspoon nutmeg, one-fourth pound seeded raisins and half teaspoonful allspice. Beat two eggs, add half cup milk and stir into the dry mixture, adding enough milk to make a firm dough. Mold into round buns, lay two inches apart on greased pans, brush with milk, cross cut on each, sprinkle cut with granulated sugar and bake in hot oven.

A story is told of two Irishmen who were caught asleep one night in the loft of a burning building. One of them hastily drew on his trousers, and jumped from the window. In his fright and hurry he had unconsciously pulled on the garments wrong side foremost, with an effect which, when he recovered his equilibrium after the jump, excited his profound consternation. "Pat! Pat!" called out his companion still in the loft; "air ye kilt intirely?" "No, Mike," replied Pat, in hopeless tones. "It's not kilt Oi am, me bye; but I fear Oi'm fatally twisted!"

"Who is the man who is so loudly and energetically opposing restrictions on automobile speeding? I don't recollect having seen him among the motorists before?"

"You haven't; he's not a motorist. He's an undertaker."

Little Phillip had just returned from Sunday-school and was eating some candy. Mother: "Phillip, give your sister some of your candy." Phillip: "Nope!" Mother: "Why not?" Phillip: "'Cause my Sunday-school teacher told me to 'cleave to that which was good'."

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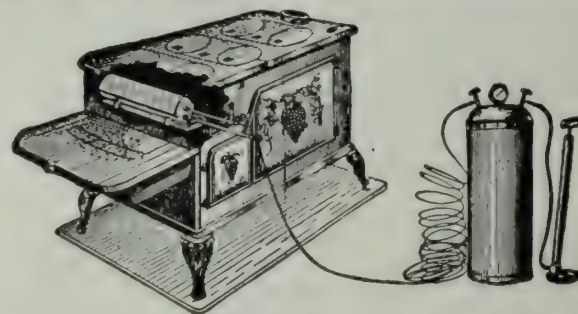
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PASADENA, CAL.

"I could be happy with you in the humblest cottage," he declared. "Maybe you could," she replied, "but you won't."

Our Young Folks

The Baby Show.

"Our baby is the prettiest in the village," said Bob Bunting. He looked round, as if to defy anyone to contradict him; for a moment no one spoke. But at last a shrill voice piped up:

"No, ours is." It was Tom Jinks who uttered the words, and he pushed his carriage up against that which Bob Bunting was propelling, as much as to say: "There, now, look at them both. Make your own decision."

Everybody looked at the babies. Baby Bunting was a big baby, with black eyes, red cheeks, a rosy mouth,

and a head of tiny black curls at an age when many babies had no hair at all, and was always laughing.

Baby Jinks was a delicate little fellow, with one yellow curl hanging over his forehead, and the rest of his head covered with down, like a little chicken. His blue eyes were very soft, and his chin had a dimple in it. He was not so fine as Baby Bunting, but he was a great deal sweeter.

Tom looked at him admiringly, and looked at Bob determinedly, added:

"So he is. There now!"

"Oh, pshaw!" said Bob "Your baby may be a good baby and you may love it, but nobody can look at the two for a minute and not know ours is seven hundred thousand times as handsome."

Something in his tone, rather than his words, enraged Tom, and he pulled off his jacket.

"Somebody hold my wagon!" he cried, in his high, shrill voice. "Bob Bunting has got to fight this out!"

Everybody started in amazement. Bob was twice Tom's size, and had rather a reputation for fighting. A fine one the boys thought it; a bad one the mothers voted it. Mothers always do differ from boys on those subjects. Bob was the butcher's son and fed on the best of beef. Tom's father was a lame little tailor, and Tom was going to learn his trade, but evidently it would not take nine of him to make a man.

"Bob has got to fight it out," he repeated, "and I guess when he gets through he'll be willing to own up that our baby beats his."

Thus challenged, Bob could do no less than to pull off his jacket.

"I wasn't looking for trouble," he said, "but if you want to fight, I'm ready. Who'll hold the kid while I finish that fellow?"

At this moment he experienced a surprise. A big hand came down on his coat collar and lifted him up to the top of a high stone wall behind him, and perched him there, and another landed Tom Jinks in the same place.

"If either of you wants a flogging, I can give it to you," said a gruff voice.

And the boys saw that Squire Evans, the biggest as well as the richest man in the place, had elevated them to the position they occupied.

"Fighting is no way to settle a thing of that kind," he said. "Put it to the vote. You think your baby is the prettiest in the village, Bob?"

"Of course I do," Bob answered.

"And you say yours is, Tom?"

"I know it," said Tom, politely but firmly.

"Let the ladies decide it," said the Squire. "They know all about babies."

Full half a dozen little girls who had been up to the minister's house to say their catechism, had paused to listen, and more now ran up.

"Here are plenty of them," said the Squire, opening his gate. "Now come in, all of you. The question under discussion, girls, is, which baby in the village is the handsomest. These boys each want to fight for his own brother, but I'm going to make you vote for it, and the one who gets the most votes is entitled to be called 'The Beauty Baby of Green Village.'"

Meantime he had taken from his pocket a little pad of paper, and gave a piece to each girl.

"I'll lend you each my pencil in turn," he said, "and each of you must write on a piece of paper the name of the baby who seems to her most beautiful, fold it and drop it into my hat. Then I count them, and I shall give a



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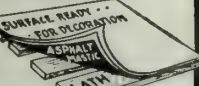
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prize to the one who has the most votes. Understand?"

"Yes, sir," cried the girls in chorus, and all thought it fine fun.

Meantime, Bob felt sure his mother's baby would win the prize, and Tom was equally certain that his tiny brother would be elected to be the beauty of Green Village. Each reached over and got the handle of the carriage he managed and held it with his foot as he sat in his lofty position. As for the little girls, each in turn wrote something on the paper, and folded it and put it in the squire's hat. It took a long time for them to write, but no one showed the least indecision. They had evidently all made up their minds beforehand.

The Squire was growing somewhat curious as to which baby would come off best, and when the last had written, he picked up his hat, placed it on his knees and unfolded the papers one by one.

There were fourteen in all, and as he read his mouth began to turn up at the corners. The little girls had been asked which was the most beautiful baby in Green Village, and each had written the name of their own family baby. Nobody had mentioned Baby Jinks or Baby Bunting anywhere.

The Squire read the names out one by one, and burst into a jolly laugh.

"Each of the young ladies holds a different opinion, it seems," he said. "And the young men still hold to theirs. Therefore I have nothing to do but to pronounce every baby in Green Village the most beautiful ever seen and offer a prize to each. Follow me, all of you."

Then the Squire led the children in procession to a toy store, and bought a rattle for each baby on the list. The two handsomest were for Baby Bunting and Baby Jinks. These were exactly alike.

"Evidently, ladies," he added, "you understand the use of the ballot." But the little girls had to ask their mothers what he meant by that.—N. Y. Ledger.

Every mother should see that her little one has regular hours for long naps. In the morning, usually the busiest in the household, the baby should be accustomed to have a long sleep. Many mothers are careful to put the child away from all noise and suppress any that the other children may make, in order that he may not be disturbed.



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Company Officer—"In which direction can you see farthest?"

Promising Recruit—"The way I looks!"—Punch.

THE MARKETS

San Francisco, April 15, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The wheat holdings in the North appear to have been pretty well cleaned up, and there is now very little movement in this direction. The spot market here continues very firm, with only slight fluctuations in most lines. The quotation on forty-fold has been marked up slightly, but other lines are unchanged from last week.

California Club, ctl.	\$1.62½ @ 1.65
Forty-fold	1.65 @ 1.70
Northern Club	1.62½ @ 1.65
Northern Bluestem	1.75 @ 1.77½
Northern Red	1.62½ @ 1.70

BARLEY.

Crop prospects continue to be the ruling feature in the barley market, and prices have weakened more or less. The ruling quotation on spot grain is about 2½c lower all round. There is a lot of activity in future barley, with lower prices being paid for both May and December options. A more or less uncertain market is expected until after the size of the new crop is fully known.

Brewing and Shipping..	Nominal
Choice Feed, per ctl.	1.07½ @ 1.10
Common Feed	1.05 @ 1.07½

OATS.

Red oats are now practically out of the market, leaving white alone for a time. Very little movement is reported, and prices have been unchanged for some time.

Red Feed	\$1.50 @ 1.60
Gray	Nominal
White	1.25 @ 1.30
Black Seed	Nominal

CORN.

Eastern yellow shows no change from the firm position it has held for some time. Egyptian corn and Milo maize are both reported as firmer, and quotations for both have been marked up during the week.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @ 1.82½
Eastern White	Nominal
Egyptian	1.85 @ 1.90
Milo Maize	1.80 @ 1.85

RYE.

Dealings in rye are barely sufficient to keep the market quotable at the old figures.

Rye, per ctl.	\$1.45 @ 1.50
---------------	---------------

BEANS.

The bean situation continues to be all in favor of the sellers. Prices are firm all along the line, with limited supplies in several sorts. Most sorts are quotably unchanged; but black-eyes, red kidneys, and Mexican reds are all up 25c per hundred, and large whites are up 10c per hundred. Still higher prices are anticipated on certain lines, and no weakening is probable till the new crops begin to have an effect.

(On wharf.)

Bayos, per ctl.	\$6.20 @ 6.50
Blackeyes	6.00 @ 6.25
Cranberry Beans	4.50 @ 5.00
Horse Beans	2.15 @ 2.25
Small Whites	5.50 @ 5.75
Large Whites	4.00 @ 4.10
Limas	6.75 @ 7.00
Pea	4.25 @ 4.50
Pink	4.00 @ 4.20
Red Kidneys	6.25 @ 6.50
Mexican Red	6.00 @ 6.25

SEEDS.

It is the same old story in the seed market. The limited transactions of the week have been at the old prices.

Alfalfa	12½ @ 15 c
Broomcorn seed, per ton.	Nominal
Brown Mustard, per lb.	3½c
Canary	7 @ 7½c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Owing to the strong position of wheat, flour is very firm, but there have been no advances this week, nor are any expected in the immediate future.

Cal. Family Extras	\$5.80 @ 6.20
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Bakers' Extras	4.80 @ 5.40
Superfine	3.90 @ 4.20

Hay and Feedstuffs.

HAY.

Heavier arrivals during the past few days with no perceptible increase in the demand seemed to threaten a still further drop in values, and it is reported that some sales have been made at considerable concessions, but on the whole, though a number of changes in quotations are noted, prices are kept fairly steady at about the former figures. There seems to be a shortage in the stock of fancy wheat hay in small bales; and this quoted considerably higher than ordinary No. 1 wheat. Apparently the rains and the increased prospects of a large yield and abundant green feed are causing country holders to increase their shipments to this market in spite of the low prices now prevailing. The movement in alfalfa hay has dropped off, owing to the influence of the rains and the green feed.

Fancy Wheat, light bales.	\$15.50 @ 16.50
No. 1 Wheat, or Wheat	
and Oats	13.00 @ 14.00
do No. 2	11.00 @ 13.00
Lower grades	9.50 @ 11.00
Tame Oats	12.00 @ 13.00
Wild Oats	9.00 @ 11.50
Alfalfa	8.50 @ 10.50
Stock Hay	7.00 @ 9.00
Straw, per bale.	65 @ 95c

FEEDSTUFFS.

Feedstuffs are a little weak all along the line, the abundance of green feed having checked the demand materially. Rolled barley and rolled oats have both declined in price, and there is a probability that other items may follow soon.

Alfalfa Meal, per ton.	\$18.00 @ 19.00
Bran, per ton	25.50 @ 26.50
Oilcake Meal	34.00 @ 35.00
Cocoanut Cake or Meal.	26.00 @ 27.00
Cracked Corn	41.00 @ 42.00
Middlings	33.00 @ 34.00
Rollod Barley	24.00 @ 25.00
Rollod Oats	28.00 @ 30.00
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

The general trend of the vegetable market has been lower this week owing to the warm weather bringing in most lines in increasing quantities. Asparagus, however, notwithstanding large arrivals, has held its own and is quoted about as before. Wax and string beans are now in quotable supply, and should be abundant soon. Peas are down, as is lettuce. Rhubarb is also more plentiful and is quoted lower, owing in part at least to the poor quality of the offerings.

Cabbage, per ctl.	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.	7 @ 8c
Carrots, per sack.	35 @ 50c
Green Peas, lb.	2 @ 3c
Tomatoes, Mexican, box.	1.25 @ 2.25
Beans: Wax	7 @ 9c
String	9 @ 12½
Sprouts, lb.	4 @ 6c
Celery, large, crate.	1.50 @ 2.25
Rhubarb, box	50c @ 1.25
Lettuce, crate	40 @ 75c
Mushrooms, hothouse, lb.	30 @ 50c
Asparagus, box	1.00 @ 1.75

POTATOES, ONIONS, ETC.

The potato market is not particularly firm, except as regards sweets. River whites are unchanged in price, but Oregon stock is quoted lower. Not much interest is manifested in onions and Australian stock has been marked down. Sweet potatoes are firm at the recent advance. Garlic is firm at the high figure, but transactions are light. New potatoes are in larger supply at lower prices.

Potatoes:	
River Whites	75 @ 85c
Sweet Potatoes, per ctl.	2.10 @ 2.25
Oregon Burbanks	75c @ 1.00
Onions: Australian	4.50 @ 4.75
Bermuda, crate	2.00 @ 2.50
Garlic, per lb.	25 @ 30c
New Potatoes, lb.	3 @ 4c

Dairy Produce.

POULTRY.

The poultry market, which inclined toward easiness a few days ago, is

strong again now, and all young stock is in good demand. All weights of hens are up about 1c per pound, and choice stock of young roosters are up still higher, some fine stock being sold as high as 25c. Broilers and fryers remain as last quoted, but are firmer than they were a few days since.

Large Broilers	25 @ 30 c
Small Broilers, per lb.	30 @ 35 c
Fryers, per lb.	24 @ 26 c
Hens, extra, per lb.	20 @ 21 c
Hens, large, per lb.	20 @ 21 c
Small Hens, per lb.	20 @ 21 c
Young Roosters, per lb.	22 @ 25 c
Squabs, per doz.	\$2.00 @ 2.25
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb.	20 @ 21 c
do dressed, choice.	23 @ 25 c

BUTTER.

Butter prices have been down and up and down again this week, closing 1c lower than a week ago. The demand has been good, but receipts have been steadily growing. A heavy shipment came in from Oregon early in the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23½	23	23	23½	22½	22½
Prime						
Firsts	23	22½	22½	23	22	22
Firsts	22½	22½	22½	22½	22	22

EGGS.

The egg market is in excellent shape, with prices nearly to the levels of last week. The Easter demand was large and prices ranged as high as 23c for extras during the closing days of last week. The drop after Easter was not very marked, and it now looks as though the market will absorb the increased supplies in pretty good shape.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22½	23	21	21	21½	21½
Firsts	21	21	20	20	20	20
Selected						
Pullets	20	20	19½	19½	19½	19½

CHEESE.

The demand for cheese is better than for some time, and there has been an advance in both fancy flats and Young Americas. There is at present very little demand for California flats, and what business is done is at the old figures.

Fancy California Flats, per lb.	16½c
New Young Americas, fancy	19 c
Monterey Cheese	13 @ 14 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	24	23	23	23	23	23
Eggs	22	22	22	22	20	23
Cal. cheese:						
Flats	16½	16½	16½	16½	16½	16½

Deciduous Fruits.

The market is still waiting for the early cherries, but these have not yet come in in quotable quantities. Strawberries are more plentiful, and as some of the arrivals have been in poor condition prices have been a little irregular. Prices for even the best stock are considerably lower. Apples are selling slowly, as little interest is taken in them. Oregon Ben Davis are out of the market and are no longer quoted. The apple stocks now shown are showing the effects of the long holding and buyers are giving the preference to citrus fruits very largely.

Strawberries:	
Southern, crate	75c @ \$1.00
Fresno	\$1.00 @ 1.50
Banner, chest	7.00 @ 10.00
Longworths, chest	12.00
Apples: Newtown Pippins	1.25 @ 1.75
Oregon Spitzenbergs	1.40 @ 2.25

Dried Fruits.

Aside from peaches, very little dried fruit is reported in the hands of the growers. These are moving out slowly, and the belief is general that the last of them will be out of first hands before the new crop comes in. A lot of interest seems to be taken in the new crops in a number of lines. One large buyer has been buying new crop peaches in the San Joaquin valley at 4½c. Reports from the same section show that the buyers are out for both green and dried fruits and some business has doubtless been done. It is claimed that a good deal

of business has been done in the 1914 crop of dried figs at figures ranging from 3½ to 4c. Some apricots have also been sold. A report secured from growers in the Fresno district gives the following prices as being paid there where any buying is being done: Muscats, 3½c; Thompsons, 4c; Sultanas, 3c; Malagas, 3c; Faberzagoes, 2½c; black grapes, 2½c; figs, 4c; apricots, 8½c; peaches, 4½c; and prunes 3½c base. The New York Journal of Commerce says of the dried fruit outlook:

"Demand for future prunes from this quarter at least is still comparatively light and apparently not affected by adverse crop reports. Neither do the latter seem to have had any influence so far on packers' quotations. September shipment still offers on a 5c f.o.b. four-size bulk basis, and first half October shipment is quoted on the four-size basis of 4½ and 4¾ f.o.b., according to seller and assortment. In prunes on the spot here the brisk consuming demand which has been a feature of the market for several weeks past is giving place to a more moderate movement which is regulated by present needs of retail distributors. However, the firm tone of the market is maintained, as most jobbers are lightly supplied, the bulk of the stock being controlled by one or two houses.

Advices received from California confirm previous reports that the outlook for a big apricot crop will not be fulfilled. In several of the chief producing districts the just forming fruit has already dropped heavily, these reports say. Packers' buyers are in the field offering growers 8½ to 8¾c for orchard run, but the latter are in no hurry to make contracts on their crops. Spot apricots are scarce in California, and supplies in distributing markets are reported to be unusually light. Consequently the market on available stock is decidedly strong, though at the moment no important demand from local consumers is to be noted.

"Peaches, promising a large crop this year, are not in much demand for future delivery, as buyers look for prices more in their favor later on. Spot peaches have not yet begun to move here, and prices are somewhat nominal, but the market has a steady undertone.

"The situation in raisins is unchanged. The chief interests firmly maintain quotations on the basis of guaranteed prices established some time since, but seem to be getting little business. Independent packers appear to have little if anything to offer. Locally trade is light, and on the hand-to-mouth order, as usual at this time of the year, and so far as can be learned, distributors have about all the stock their trade will need for some time to come."

Evap. Apples, 1913	Nominal
Apricots, 1913	Nominal
Figs: White	Nominal
Black	Nominal
Calimyrna	Nominal
Prunes, 4-size basis	Nominal
Peaches	4 @ 4½c
Pears	Nominal
Raisins (in sweatbox):	
Loose Muscats	4 c
Thompson Seedless	5 @ 5½c
Seedless Sultanas	4½ @ 4½c

Citrus Fruits.

The Eastern auction markets show a better tone and a little advance in prices. The fact that Florida shipments are growing smaller and the fruit from California is of a better grade, is the cause of better market quotations. Lemons are rather slow, while foreign stock has taken a slump in prices, lower than for several years. The California citrus crop is now estimated at 45,000 cars, with a prospect of over 50,000 cars for next year. Already fruit shippers in the south are looking for chances to enlarge the market and expect that the Panama canal will give them rates that will enable them to compete in European markets.

Shipments from California during the past week have been heavy, averaging nearly 250 cars per day.

On the New York auction, Monday, April 13, 56 cars of navel oranges were sold at prices averaging from \$1.45 up to \$3.30 per box. Lemons averaged \$3.20

per box. Other auction points were about the same as New York. On the Los Angeles auction last Monday, 3 cars of navels were sold at prices averaging from \$1 up to \$1.40 per box, f.o.b. California.

The orange market in San Francisco is steady, with the demand keeping up well. The absence of deciduous fruits and the satisfactory quality of the offerings tends to help out the situation. Lemons are a little weaker, but are moving out fairly well.

Oranges: Navels	\$ 1.00@ 2.25
Tangerines, crate	75c@ 1.25
Grapefruit, seedless	2.75@ 3.50
Lemons	1.75@ 3.50
Limes	5.50@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds and walnuts are both out of first and second hands, and the chief interest is now in the coming crops. It is still too early even for guesses at the 1914 output, though most reports so far received indicate a heavy yield.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15½c
Languedoc	15½c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

The honey market has weakened a little this week, the general run of prices being about 1c lower all round.

Comb: White	13 @14 c
Amber	10 @11 c
Dark	9 c
Extracted: White	7 @ 8 c
Amber	6½c
Off Grades	3½@ 5 c

BEESWAX.

The wax market is dragging along in much the same way as for some time. Prices show very little variation.

Light	30 @33 c
Dark	28 c

HOPS.

A few contracts continue at about the figures quoted last week, but no real life is felt in the market. Reports from Portland show that the market for Oregon hops is inactive. Locally quotations are unchanged.

1913 crop	15 @17½c
1914 crop	14 @16 c

Live Stock.

Quite a number of early grass-fed cattle are being offered here from the southern end of the State, and the price of beef is a little uncertain for the immediate future. Receipts of range calves have been light, but dairy calves are plentiful. Receipts of desirable hogs are running light, and there are prospects of higher prices.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Helpers: No. 1	6¼@ 6½c
No. 2	5¼@ 6 c
Bulls and Stags	2½@ 5 c
(Grass-fed cattle, ¼@½c less.)	
Calves: Light	8½@ 9 c
Medium	8 @ 8½c
Heavy	6½@ 7½c
Hogs: Grain-fed, heavy...	8 c
150 to 250 lbs.	8¼@ 9 c
100 to 150 lbs.	8½@ 8¾c
Prime Wethers	5½@ 5¾c
Ewes	4½@ 5 c
Milk Lambs	6 @ 6½c

DRESSED MEATS.

Steers	12 @12½c
Helpers	11½@12 c

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430 Davis St., San Francisco.

References: Bank of Italy, San Francisco; Peoples Savings Bank, Sacramento; and Wells, Fargo & Co.

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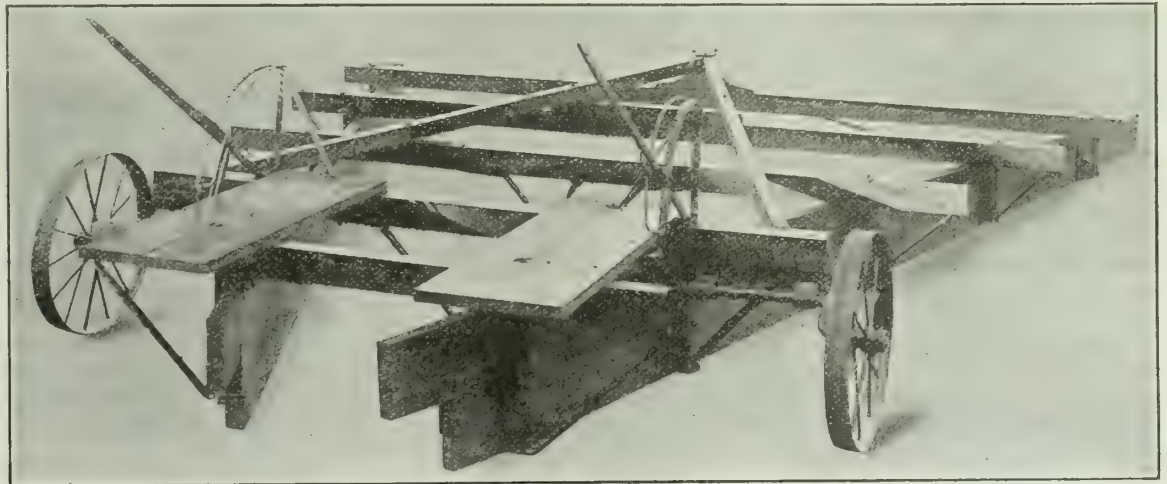
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OPERATING OWN LOGGING CAMPS AND MILLS

Veal, large	12 @13 c
Small	14½@16 c
Mutton: Wethers	11 @11½c
Ewes	10 @10½c
Suckling Lambs	13 @14 c
Dressed Hogs	13½@14 c

WOOL.

Advices from the wool growing sections are favorable. Sales are reported in the Red Bluff section at from 16 to 18c, or about 3c higher than last year. Some sales have also been made at Livermore at 16 and 17c. Buyers are said to be quite plentiful in the growing districts.

Spring Clips:

San Joaquin	12@14c
Humboldt and Northern	15@19c

HIDES.

Hides continue very scarce even at the present high prices. California tanners are running only to part capacity, with small prospects of getting sufficient hides to work their plants to the full. Prices are as before.

HORSES.

The horse auctions here are not very active recently, the stock offered not being up to the requirements of the market. Prices for off-grade horses are decidedly easy but rather hard to

fix. The claim is made that private buyers are paying more attractive prices than are realized at the auctions.

Heavy drafters, 1700 lbs. and over	\$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500	200@225
Wagon Horses, 1250 to 1350	150@200
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	75@100

MULES.

1200 lbs.	\$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

For a number of years we have thought that every farmer should have a typewriter in his home. While he may not write many letters each day, yet he must write some, and the ease with which he can master a typewriter and the value of keeping copies of his letters, makes the cost of the machine a secondary consideration. C. H. Jennings & Co. are advertising in this issue a very low-priced typewriter that will do the work as well as a higher priced ma-

chine; we would urge our readers to look up the ad. and get one.

At a meeting of the stockholders of the Pomona Manufacturing Co. held Monday evening, April 6th, at Pomona, California, it was voted to increase the capital stock of the company from \$75,000 to \$250,000. The general favorable reputation and all-around efficiency of the Pomona Power Heads have long since spread far beyond the confines of the Pomona valley, all over the Western States from British Columbia to the Mexican border, and they are now about to invade the Mississippi Valley. The Pomona Manufacturing Co. recently designed and built a new triplex 80-hp. pump. This has been sold and installed and the company expects to do a large business on these large power heads. In addition to building Pomona pumps, the Pomona company manufactures a full line of irrigation valves and gates, structural iron and repair work of all kinds. With the building of the new modern machine-shop, the company is better equipped than ever before to handle the needs of the irrigator. The company has been a dividend payer for a great many years and is looked upon with some pride by the good citizens of Pomona.

As we write this there are on the shipping desk over 100 copies of "One Thousand Questions Answered" wrapped and addressed to as many subscribers to the RURAL PRESS. This new book of ours is selling to "beat the band." It is such a valuable and handy volume that we want every one of our readers to secure a copy. The price is \$1.50 postpaid, but we make a special offer to subscribers of the RURAL PRESS. Send for the offer.

The first of the revised copy for the seventh edition of "California Fruits" was given to the printer by Professor Wickson this week. We expect to have the book ready for the trade early in June.

Alfalfa as a Silage Crop.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

In past years the silo has not been seriously considered by many alfalfa dairymen in California owing to the high feeding value of alfalfa hay and of the heavy yields obtainable in most parts of the State. Yet there is every evidence that this wonderful forage plant will from this time be the direct cause of much silo building activity.

WHY SILOING ALFALFA IS PROFITABLE.—There are reasons why this will be a good thing for the dairy industry, chief among them being that silos create a greater efficiency. With low priced butterfat and high priced land efficiency will most surely become a large factor in dairying as it has in all other lines of business.

Next to well bred cows capable of a high production, the utilization of land for the largest amount of butter producing feed per acre enters; and in this respect the silo has no rival.

More especially is this true in alfalfa countries, for not only does the rotation of silo crops with alfalfa aid in larger yield, but much of the waste of alfalfa may be directly saved through the use of the silo.

WEEDS DO NOT INJURE SILAGE.—This latter factor is receiving more attention from dairymen this spring than ever before on account of the large number of silos erected last year in sections where foxtail and other objectionable weeds are a menace to the curing of first cutting hay.

In such places the money loss from the first cutting has been enormous as the only method found to overcome the objection was to cure and stack the hay while still too green to make good feed.

With the aid of a silo, such obstacles are not encountered; for by putting the freshly cut hay into a silo the fox tail as well as alfalfa are kept fresh as long as desired; and the feeding value is as great as though the cows were allowed to pasture it down.

With the ordinary silo owner, who has built more for corn silage, it is necessary to run the alfalfa and fox tail through the cutter as it is almost impossible to get it to the top of the silo unless blown up.

Oftentimes dairymen do not erect silos on account of the cost of filling machinery, their idea being that to do so would entail a larger expense than the benefits would warrant.

The Jersey Farm Dairy, at Fresno, have worked out a plan for siloing the first cutting of alfalfa which does not require any more machinery or labor than would be required in stacking the cured hay, and the value of the crop as a feed is much enhanced.

UNCHOPPED ALFALFA FOR SILAGE.—Instead of building silos 30 feet or more high as usual, those on this place are only 25 feet high but are made large in diameter so that they have a large capacity. These are built of resaw and studding with a course of resaw on the outside. This makes an air chamber from top to bottom, but instead of using it for that purpose, dirt is used to fill the space, and thereby insuring a perfectly air tight wall.

A hay derrick is set alongside the silos to lift the freshly cut alfalfa from the wagons into the silo.

Two men inside the silo distribute it evenly and at the same time do the tramping.

One would suppose that put in in such long lengths, the silage would be hard to remove but no more trouble is experienced from that source than with ordinary corn silage.

During the winter months this silage is fed in about the same proportions that freshly cut alfalfa is the rest of the year and for that reason no decrease in the milk is noticeable when siloing is not practiced.

The benefits derived from this plan will be readily understood as the fox tail and other weeds do not in any way harm the feeding value of the silage and would on the other hand greatly reduce the feeding value if made into hay.

SILOING VERSUS STACKING.—For the man who already has silo filling machinery the cost of siloing this first crop of hay is as economical as though it were stacked for the cost of bunching and curing on the one hand, about offsets the cost of running the cutter.

At the ranch of Hubbard and Carmichael near Los Banos, the two silos seen are used entirely for alfalfa as corn has not been successfully grown.

In this case the silos are considered profitable even though they are used for only the first cutting of hay.

From this experience on these two dairies it would seem that the enthusiasm worked up the past year is only a forerunner of what we may expect in every alfalfa section of the State where dairy cows are maintained.

SINGLE TAX WORKS WELL.

From Modesto, where the irrigation tax has been borne by the land alone nearly three years, comes the following endorsement of the system signed by the Chamber of Commerce, Building Trades Council of the county, the Irrigation District officers, the newspapers, banks and gas company.

The district was organized in 1887; water was brought to the land in 1904.

It was soon found that the small farmer, who had built his house and barn and set out trees on his land, was paying an excess proportion of the irrigation taxes of the district. Whenever he built a house or set out a tree his share was increased.

On the other hand the large owners, who made little or no improvements and refused to sell their land had their taxes reduced, because of the increase in the total assessed value of the property caused by the new improvements.

An attempt was made to relieve the industrious small holders by placing a low assessment on their improvements. The large owners objected so strongly that the assessment was put back to the old figures, and representatives of the small farmers sought relief in the legislature. After a number of sessions, the Irrigation Law was amended, putting all of the tax in the new districts on the value of the land; while the old districts were permitted to exempt improvements and put the tax entirely on the land by vote of the resident property owners in the district.

In 1911 a petition for an election on this question was filed with the directors of the Modesto Irrigation District, and the election was held June 3, 1911. The proposition carried, and since that time the irrigation tax in this district has been raised by an assessment on the value of the lands.

RESULT OF SINGLE TAX.—As a result of the change, many of the large ranches have been cut up and sold in small tracts. The new owners are cultivating these farms intensively. The population of both the country and the city has greatly increased.

Many houses and barns have been built in the country.

In the city of Modesto, a new five story hotel and a six-story hotel are being built at a cost of about \$150,000 each. In the centre of the city many new buildings have been erected. At one street crossing "J" and 10th streets, on each of the three of the corners, marble front buildings now stand, where formerly there were small wooden shacks.

The new system of taxation collecting all of the taxes from the value of the land has brought great prosperity to our district. Farmers are now encouraged to improve their property. Industry and thrift are not punished by an increase in taxes. Personal property has never been taxed for irrigation purposes.

During the past year \$260,000 was raised in this district for interest on bonds, maintenance, and special replacements and construction work.

Reports from Red Bluff, Tehama county, state that the prevailing price for wool in that county is 16 to 18 cents a pound. The sheep there wintered well and the output is expected to reach 2,000,000 pounds this year.

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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WANTED—Manager for demonstration plant for Spineless Cactus in every town in California and Arizona. Big commissions made. Write SPINELESS CACTUS PLANTATION CO., 315 South Hill St., Los Angeles, Cal.

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AIR SLACK LIME—H. B. Matthews 733 Merchants Exchange Bldg., San Francisco.

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FOR SALE—Peach, apricot, plum, prune, fig, apple, pear and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants, elms, maple, Balm of Gilead, umbrell and other shade trees; palms, roses, or namental trees and shrubs. Write for special prices. FRINK & KOHMAI Nurserymen, Box 1212, Fresno, Cal.

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If you intend to plant **OLIVES** or **RHUBARB**, write for my free booklet. Alta Vista Nursery, Highland, Cal.

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STEAM HARVESTING OUTFIT FOR SALE—BEST ENGINE, HOUSER-HAINES HARVESTER (SEPARATOR NEW), OIL WAGON, WATER WAGON, COOK HOUSE, TOOLS, ETC., everything complete for the field. ALL IN FINEST CONDITION and offered at a BIG BARGAIN. Terms. Entire outfit can be seen in Stockton. STOCKTON ICE & FUEL CO., 33 South Eldorado St., Stockton Cal. PHONE 47.

FOR SALE—Portable pumping plant, International 8 H.P. gas engine and 5-inch pump, mounted on wagon, necessary pipe; all practically new; cost \$600; price \$300. M. P. STEIN & CO., Stockton, Cal. Phone, 421.

ORCHARDISTS: For sale very reasonable, JOHNSTON IMPROVED TRACTOR. Good as new. Takes place of 12 horses. Just the thing for your orchard. See J. A. WINKELMAN, Mayhew, Sacramento County, Cal.

TRACTOR AT A BARGAIN—1912 model Mogul; 45 H.P.; I. H. C. engine; first-class condition. R. F. SCHMEISER, Winters, Cal.

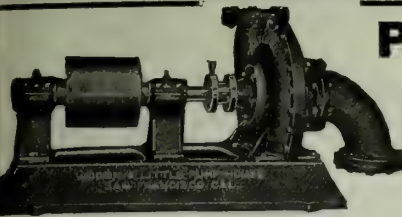
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NEW CASE THRESHING OUTFIT—32-54 inch separator, recleaner, wind stacker, 60 H.P. steam traction engine, water wagon, 2 new section John Deere plows. Price \$1500. Might trade for some live stock. Box 83, Heber, Imperial Co., Cal.

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160 ACRES ALFALFA LAND—40 bearing vineyard; family orchard; good improvements. Price low, easy terms. Box 56, Elk Grove, Cal.



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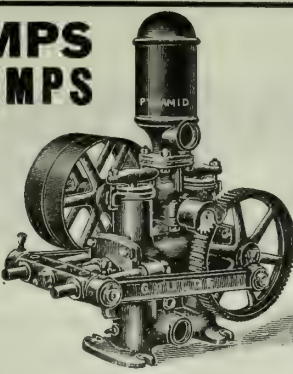
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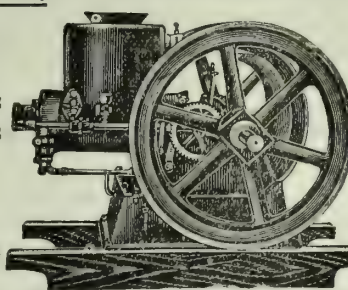
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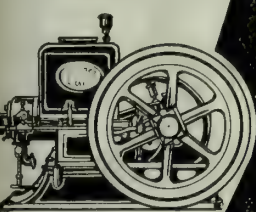
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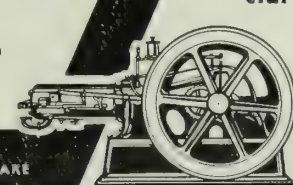
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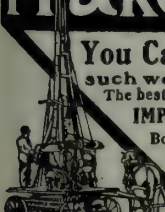
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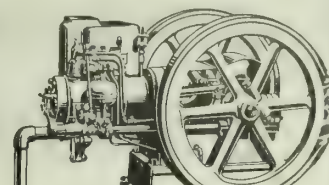
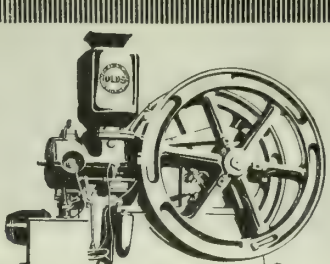
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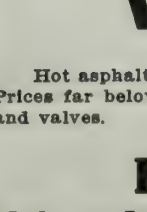
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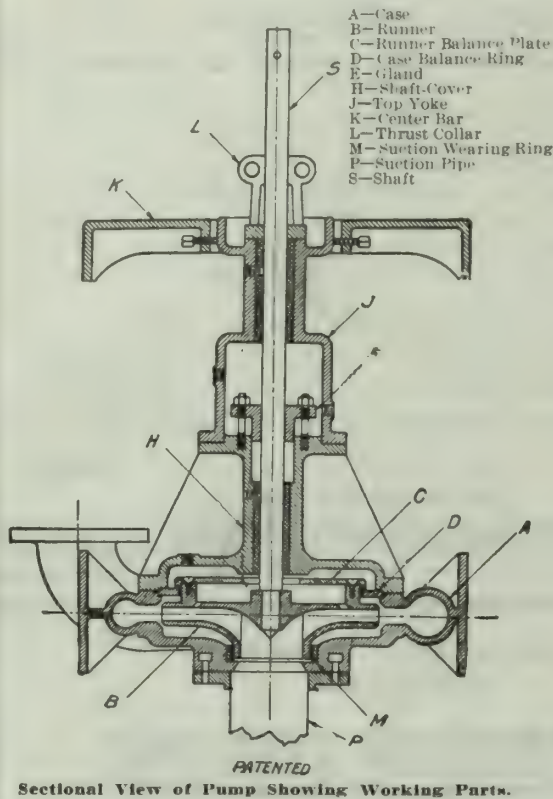
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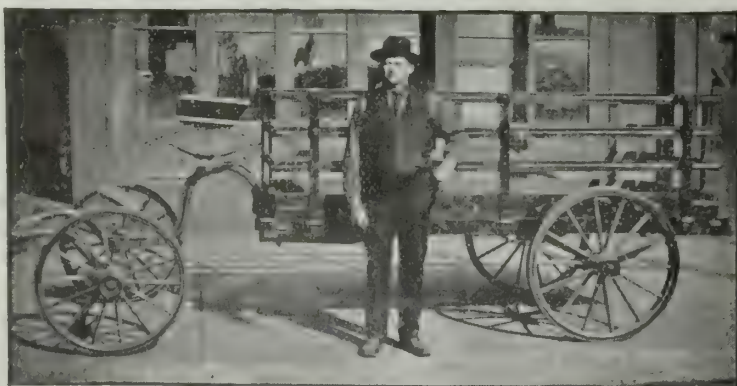
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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 17.

SAN FRANCISCO, SATURDAY, APRIL 25, 1914.

For the 44th Year.

7-1-14
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Using the College of Agriculture.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

If I were a farmer, or a group of farmers representing all agricultural interests in the State, what uses could I make of the University Department of Agriculture; how would I go at it; what conditions must I meet in each case?

This question, put to Dean Thomas Forsyth Hunt and to the men and women in charge of the varied activities of the Agricultural Department of the University, brought the almost unanimous response that their sole aim is to learn what California farmers need to know; and then to make it easy for them to adapt such knowledge to their work and pleasure. There are three general phases of this work: (1) definitely planned investigation by experiments in which all conditions possible to be known are recorded; (2) instruction of students who come to the University, free of tuition; (3) what is called "extension work," by which every farmer in the State is entitled to everything that the Department (College) of Agriculture has available.

This article treats of the last named phase, part of which is organized into a definite Division of Agricultural Extension in charge of Prof. W. T. Clarke, assisted by an enthusiastic and competent staff.

The extension work, however, is not carried on solely by this staff. Much of it is under their direction, and they make arrangements for the other specialized divisions to do extension work wherever there is call for such. In addition, professors and instructors in the other divisions make independent appointments throughout the State, on request; they answer letters of inquiry on all subjects under the agricultural sun; they make examinations of soils, fertilizers, feeds, seeds, etc., and diagnoses of plant and animal diseases. All the services of the Department of Agriculture are free to Californians, except nominal expenses as stated below. Foremost among the extension activities is the answering of letters from those interested in agriculture. Whatever question occurs to the mind of any farmer will be answered if there is an answer, but none are given for advertising purposes. Of course, a multitude of problems remain to be worked out, the agricultural experimenters have been and are now delayed by lack of money for the investigations necessary; but each inquiry is referred to that division which knows most about the subject. These questions may be addressed to the College of Agriculture, Berkeley, the Extension Division, or to individuals of the faculty. In six months ending June 30, 1913, 27,718 letters were written; from July to December the monthly letter writing was as follows: 3688, 3129, 4180, 4881, 4199 and 5367. Questions on soils and fertilizers seem most numerous.

Correspondence courses, very recently inaugurated, show a tre-

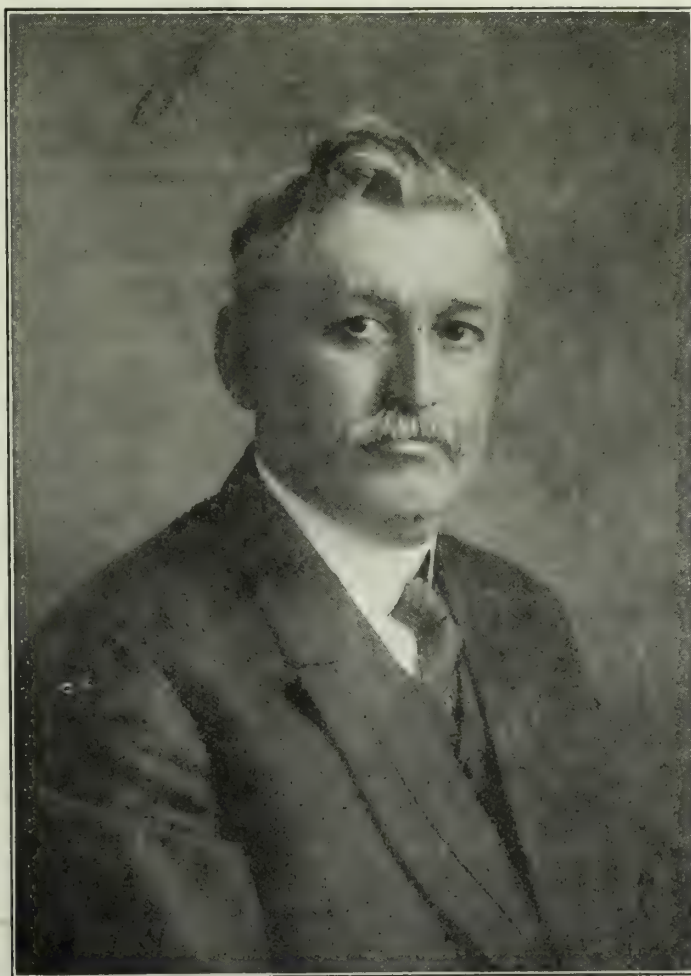
mendous growth. Not all of the 32 courses are yet ready, but the enrollment on March 1 was 4067. In March, 1823 enrolled, 62 of them beginning second subjects. Only one course may be taken at a time. Studying alfalfa, April 1, 1504 were enrolled; onions, 195; barley, 40; swine, 276; poultry, 1985; walnuts, 376; grapes, 230; citrus, 730; olives, 119; figs, 144; home floriculture, 291. Besides the 5890 total enrollment in courses already available, 1168 are enrolled in courses not yet entirely prepared. Of these, 444 want the dairying course, 212 bees, and smaller numbers corn, beans, potatoes, wheat, oats, rice, sheep, beef, apples, pears, peaches, plums, cherries, almonds, home ground ornamentation, rural public health, canning and preserving, dates, other semi-tropical fruits. A letter to the Division of

Agricultural Education is all that is necessary to receive the first two lessons. When answers to the questions on the first are sent to the College, the third lesson is sent.

Still more personal touch is obtained by sending members of the faculty to address all sorts of meetings, and even to investigate special interesting problems of individual farmers. Half fares or passes are usually obtained from the railroads, and the people interested are expected to pay the railroad fare and hotel expenses of the speakers. Otherwise there is no charge. Dean Hunt, however, wishes emphasis placed on the fact that he should not be expected to send a man "by return mail," as many request and only a few can possibly receive. For instance, a San Diego man wrote April 13 for a man to speak on the 17th. The Dean received a telegram on Wednesday wanting him to speak Saturday, whereas his time is fully engaged till August. A Los Angeles community wants advice on fertilizers, and it so happened that Prof. Clarke could go there a week later, but it is especially desirable that two weeks to a month's notice be given of desired visits by members of the faculty.

Farmers' Institutes are occasions which may be arranged by request of a number sufficiently large to insure a good meeting. These and re-

quests for all other addresses are preferably in the form of a petition bearing the names of 50 or more interested parties and addressed to the Division of Agricultural Extension. If discussion of special subjects is desired, those most competent will be sent for the purpose. Meetings are often held in connection with conventions, land shows, etc. From July 1, 1913, to February 1, 1914, about 138 such Institutes and meetings, of one to three days duration, were held in practically every county in the State, 76,620 people having attended them. To April 1, attendance at these meetings since July 1 had been 85,429. Farmers around San Francisco bay and in the big central valley seem to have been most alive to their opportunities in this line. One meeting was held in the desert by Prof. Clarke with six attending, while 300 is perhaps the commonest attendance at



Thomas Forsyth Hunt, D. Agr., D. Sc., Dean of the College of Agriculture and Director of the California Experiment Station.

(Continued on Page 496.)

Pacific Rural Press

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Apr. 21, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maxi-mum.	Mini-mum.
Eureka.....	.72	34.45	41.45	62	40
Red Bluff.....	.03	32.37	22.75	88	42
Sacramento..	.00	19.32	18.50	80	48
S. Francisco..	.02	28.92	20.93	82	48
San Jose.....	.00	18.96	15.76	86	40
Fresno.....	.02	10.72	8.60	92	44
Independ'ce	.00	11.44	8.48	84	38
San L. Obispo	.00	30.92	18.84	90	46
Los Angeles..	.06	22.87	14.90	92	54
San Diego.....	.04	9.06	9.38	84	54

The Week.

We hope our old friend, Edward Berwick, pioneer apostle of peace, is busy preparing a resolution for the Fruit Growers' Convention of June next, setting forth the fact that the three-ring circus, which is opening this week in Mexico, is not war in the accepted definition of the term. According to the dictionary of the peace prophets, war is such an affront to current civilization that the thing itself is no longer possible, and the word, which has been the sign of it, becomes obsolete. It is really very remarkable how popular the peace propaganda has become. There has been nothing but wars and rumors of wars, since universal peace was proclaimed as a world policy a few years ago. But a fact like that is no handicap to a good, full-throated propagandist, and so we are prepared to support what, we presume, will be Mr. Berwick's contention that the current imbroglia has come about not through thirst for war but through necessary discharge of police duty by the United States in the interest of the world's peace and the maintenance of proper national dignity. Thus the trouble in Mexico is not war, but a cure for war. Now that the gods are working on an 8-hour schedule and do not find time to fire thunderbolts at insolent earthly potentates, it becomes necessary for the world to police itself and it is the big stick which our fleet is carrying to Mexico. That this is the view of the American people at large is shown by these words from the Senate resolution, adopted on Monday of this week: "The United States disclaims any hostility to the Mexican people or any purpose to make war upon them."

There are, no doubt, some people who would rejoice to see opportunities opened in Mexico for enterprise and for uplifting, by some sort

of an over-lordship of the American eagle, but the ruling belief is in Mexico for the Mexicans. We hope that by June Mr. Berwick's resolution may point with satisfaction to a new victory for peace.

How We Change with the Times!

Thinking of the fast-fading glories of the warrior in the eyes of mankind, we are reminded of a local phenomenon which is, in a way, striking and significant of a broader view, very acceptable when so many public thoughts seem running to narrowness. We read in a popular San Francisco newspaper these lines: "Chinese maidens from San Francisco will strew California poppies on the streets of St. Louis at a celebration to be held there May 20. They will go east with Mrs. Marmaduke Eskridge, special representative of Mayor Rolph, who has received word from Governor Majors of Missouri that he will meet and escort her to St. Louis. Every governor and every mayor of the principal cities in the United States has been invited to attend or send a representative. Mrs. Eskridge will wear a "poppy" dress in the pageant, and she will ride in a float surrounded by the Chinese maidens. The flowers scattered about the streets of St. Louis will be brought from California."

All this strikes us as very pretty and proper and a very effective way to impress the uniqueness of California and the coming world's fair upon the negligent Eastern people. And yet one cannot help being a little startled by it. Thirty-five years ago the journal, which now publishes the above paragraph as a piece of interesting news, could not have been hired to print it as an advertisement, so fearful was it of the demagoguery which was then ascendant in San Francisco. At that time, too, a mayor of San Francisco would sooner have honored a carload of white slaves than of innocent Chinese maidens, and it would have been safer for him politically. We are very glad that this generation is making atonement to the Chinese race for some of the indignity which the last generation heaped upon it in this State. "The Chinese must go"—oh, yes: to St. Louis in a floral pageant!

A Queen of Trumps.

This graceful exploit of the fair sex for the advancement of the State, which has placed upon the duty so to do by enfranchisement, suggests a queenly enterprise which will be far more effective toward the recognition of the equality of women than all the freaks of the English suffragettes—and rightly, too, because it is an exponent of a woman's real worth in the world. Queen Eleanore of Bulgaria proposes to leave her husband at home and have some noble fun in the United States all by her lonely. There is said to be keen rivalry among Bulgarian women of high rank to be included in her suite—at which we do not wonder, for it will probably be the greatest prank a bunch of girls ever thought of in the world. The queen will bring with her four Bulgarian girl students from the Roberts College, the American institution at Constantinople, to be instructed as trained nurses in American hospitals. The queen is herself a trained nurse and took a prominent part in the field hospital work during the Balkan war. She hopes to be able to induce several American doctors and nurses to accompany her on her return to Americanize the hospitals of her own country. She will also

investigate handling immigrants at New York and the method of forwarding them to their destination. She will also visit President Wilson, and the Bulgarians at home believe the result will be the establishment of a legation of theirs at Washington. It will be a brave show. According to the cable, a French newspaper says: "The queen will undoubtedly receive a magnificent welcome from Americans, who will see for the first time a reigning European queen coming among them with her hand outstretched." The French writer is right: nothing will make such a thumping under Uncle Sam's waistcoat as a real queen with all the regalia of her queenship. The Solomon-Sheba incident of antiquity will not be in the same category. And, really, how much more a true, sovereign woman can do for her country than a warship. It is better to send a queen than a cruiser! The Bulgarians are wise.

Joy Riding on a Road Drag.

Some readers may turn back with increased interest to a very good description of the construction and use of the road-drag, which we gave a few weeks ago, as we tell them that the road drag gives some sensations in joy-riding which one cannot get with an automobile—and, besides, it is better for the roads. It seems that three girls were the winners of the leading prizes offered last week by the Associated Good Roads Association of Illinois for the best work of volunteer road-makers. Alma and Amanda Gewike, 17 years old, twins, left their home at 4 in the morning on a home-made drag and, ninety minutes later, appeared at Desplaines, with six and a half miles of perfectly dragged road to their credit. They returned by a shorter route and quit work that night with twelve and a half miles of road made. They received the first prize of \$65. Lillian Goede, 18 years old, also of Desplaines, received the second prize of \$45 for dragging seven miles of road. Just think, girls, of the greater joy of riding into a fine tailor-made suit with a road-drag instead of riding out of one by automobile; for that, we believe, is the way they sometimes do, and are not long about it, either.

Farm Laborers from the City.

It seems passing strange that, in view of all that is said and done about it, so many people should know so little about the requirements of farm work and insist upon looking at it as a sort of al fresco recreation. For decades it has been demonstrated over and over again that it is exceedingly rare that a city-grown man will make good as a farm laborer; the quality of success in it is a product of country birth and experience. We know there are exceptions—just enough, probably, to prove the rule. An Oregon farmer publishes his experience in trying in Portland to find two men with families to whom he offered \$50 a month, free house, free vegetables, free wood, all the room they want for garden purposes and space where they may keep chickens, etc. He put in much time to the effort to secure such families and then gave it up. He says: "Applicants have called upon me dressed in the latest fashions, wearing diamond rings and stick pins, patent leather shoes and flashy ties. They have admitted that they did not want this kind of work, but being broke thought they might get something to tide them over. Not one of them could follow a plow."

This farmer seeking help passed no criticism

on these men. He conceded them the right to dress and act as they pleased if they could pay for it. He simply called attention to the fact that a farmer could not use such men—which is absolutely true.

A Large Venture in Supplying Farm Labor.

We have only one reason for referring to this very old experience of farming people, and that is to mention it in connection with a venture by which they hope to draw "farmers" out of New York City. Actively backed by Governor Glynn of New York State, and with Charles W. Harmon of the Land and Labor Bureau of the State Department of Agriculture in active charge, we read that "real work is being done to depopulate the overcrowded mews of the city and to take the workless workers to where they can get close to nature's breast with plow and hoe in hand."

Why these people should take to plowing and hoeing nature's breast instead of reclining peacefully upon it as is their wont, and which the poets tell us is the right thing to do, we dare not guess. However, that seems to be the current New York way, and, according to this telegraphed account, it seems to be working well: "The first move of the State government was the taking of 73 men and five women on a special car to Fonda, where work was found for all but seven men. And every one employed by the farmers is getting a living from the land—a good, filling living—with \$20 to \$35 in cash each month besides. Weekly through the spring and summer, shipments of the idle denizens of the city who want work will be transported free of charge by the State to some of the rural districts and placed where they will be an asset, not a menace, to the community."

This is all very well; we hope the dream will come true, but, as above stated, common experience is against it. The chances are that these men will be so disappointed and discontented, trying to do work which they do not understand and with which they have no sympathy or interest, that the present available force of farm laborers will be demoralized and taught unreasonable requirements so that the future labor conditions will be worse than they now are—whatever that may be. Cities have no right to unload their unemployed upon the rural districts. They can employ them in city improvements and make them earn their keep that way. Of course some good countrymen are wrongly carried to the cities by false expectations, but if they really have a call to return to the country, they can help themselves back to it. We doubt if subsidized movements of people are really rational and beneficent.

City Schedule for Country Use.

One of the ill effects of the irrational attempt to enforce city schedules upon country labor is the proposed 8-hour day, of which we have said a good deal lately. It shows clearly enough that professional urban up-lifters do not know a thing about country life and work nor of the problems which the farmer has to solve in his world-feeding enterprises. They are relying upon the supposition that increased cost of labor can be covered in fixing the selling price of the product—in farm as in factory outputs. They forget that the farmer has never yet succeeded in fixing a selling price, except for nuts and raisins, and no one knows how long he can do that without being "in restraint

of trade," because no farmer can do that without combination with others. Unless the farmer will throw in his product at the market price (which he has nothing to do with fixing) he can keep it or eat it, as he thinks best; he cannot sell it. The only way he can make a product which has any chance for a margin of profit to him is by making such favorable arrangement for wages and hours of labor as his production will justify, and now legislation is proposed which threatens to take away the only chance he has to come through. There is an irrepressible conflict between urban and rural producing conditions and it cannot be reconciled by arbitrary enactments.

How shall the farmer defend himself against evils which thus impend? There is no way except by agitation, organization and voting. Knowing how hard it is to work that way in his isolation and enforced lack of leisure, the farmer may regret that the efficacy of magic has departed, for travelers tell us there is magic for such hardship. There is a tribe in Africa which is said to have protection against those who would infringe on a farmer's rights. With the help of the witch doctor certain spells are recited over the long hoe used for breaking up the ground and a "medicine" poured over it, after which it is given back to its owner to be hung up in some conspicuous place on the plantation. No sooner does the intruder creep over the boundary than the magic hoe springs to his hand. Unconsciously his fingers clasp themselves around the haft. He is bent down by a power there is no resisting, and finds himself forced against his will to hoe and hoe. Not for a moment can he pause, even to straighten his back, so long as a single weed remains on the farm, a single yam needs banking, or a single clod would be the better for breaking. So long must the evildoer continue to work for the farmer he had intended to injure. Only when the owner arrives on the scene, should he so wish, can the magic hoe be released from the hand of the one who would do him injury.

Queries and Replies.

Querists must submit full names and addresses.

Growing Peach Trees.

To the Editor: Can peach seedlings a year old be successfully budded in July this year? The trees are healthy stock and of medium size. Would it be possible to obtain dormant buds to put in during June, from any nurseryman, and would they do as well as buds put in a month later? Could the buds be forced so that trees could be planted next spring? What book on nursery work is there dealing specially with Western conditions?—A. G., Caruthers.

You can make buds take in your peach stock by watching for a free lifting of the bark and by using pretty well matured buds only. It is a little harder to make the buds stick than in budding during the first summer from the seed. You can bud in June if you can get well matured buds, and you can force that by pinching the tips of shoots in May from which you wish to take buds in June. Pinching the tip makes the buds below develop, and you must watch and take them when they are plump and before they break out into laterals. Put in such buds whenever they are ready: never mind about the calendar month. If you get a start in the end of May or June, break part of the top or girdle above the bud as soon as

it is seen to have taken, and in that way you can force sufficient growth on the bud to make a good small tree this summer. The fullest account of local nursery work is in our book, "California Fruits," of which the seventh edition is now being printed and will be ready early in June.

Why Have Bartlett Trees Shed Their Fruit?

To the Editor: Our Bartlett pears this season blossomed very full, but nearly all of the small pears have fallen off. Was it the hot weather in blooming time?—A Subscriber, Lafayette.

We do not know why. We had a talk with Mr. Anderson, of Walnut Creek, on the same subject the other day, for such a young drop seems to be widespread in your district, and we could not edify each other much. Mr. Anderson said the bloom seemed particularly strong, large petals and long strong stems, and younger trees, which would presumably have full vigor, shed their fruit just as older trees did. We guessed a good deal about it, but no guess was better than yours: it might be heat either directly or indirectly, when associated with moisture, as favoring the growth of depilatory fungi, which may make a man bald if he wear too warm a hat. We count that theory easily worth a year's subscription to anybody.

But seriously, in this connection read the letter of Leonard Coates in another column, in which he fully explains the lack of prunes to lack of pruning. Is that also the matter with the pears? Pears are, however, usually pruned regularly enough, and are usually vigorous enough even while the prunes may be more or less decrepit. The whole subject needs more and closer observation.

Eel Worms or Potato Moth.

To the Editor: My potato vines last year seemed to look as good as usual until about blooming time, when a part of nearly every hill withered, and when I dug them I found they had been perforated by something that had left small holes all through them and especially near the skin. They were grown on new sod land. Was this the work of the potato moth, or is it eel worms? Were they in the seed or the land?—C. B., Guerneville.

You give us a good deal of guessing to do. Why did you not send down a spud when you found the trouble so that we could see something? As it is, we have to figure out both the dream and the interpretation—just as Pharaoh put it up to Joseph. If you found rather small, rather clean holes near the surface, and if the potatoes were well covered with soil when you dug them, the pest was probably eel worms. The larvae of the peach moth makes large burrows, pits or excavations, and is apt to go deeper into the substance of the potato. The probability, in the fact that the land was new, is that you planted the pest with the seed. We have seen eel-wormed seed potatoes which a man proposed to plant in which you could hardly find a sound eye or piece of skin. It never pays to plant bad seed or plants.

No Right-of-Way.

A reader asks for some law about a right-of-way without signing his proper name. The only law we know is that printed under the heading above, viz: that if a querist does not give his name he has no right-of-way in these columns.

Using the College of Agriculture.

(Continued From Page 493.)

single meeting, sometimes running over 1000.

A feature of these occasions that is just germinating is the exhibition of women's handiwork, and men's and women's garden crops and men's farm crops and animals. Great interest and discussion of "how it was done" are generated by these exhibits.

High school boys' and girls' clubs are entitled in the same way to lectures and agricultural advice by members of the college faculty—farmers' clubs of men or women, formed for whatever purpose, may have them by the asking. Six per year for each club is about the present limit, but the subjects may be as wide as agriculture.

Organization of community breeders' associations and cow testing associations is fostered in the same way on the initiative of the breeders. Approved constitutions are suggested. Personal advisory visits to individuals who have peculiar problems are arranged on the same terms, and faculty members are constantly busy at this work. If a man wants to know what the climate and soil of a certain piece of land will produce, he may get disinterested advice before buying the land or afterward. If certain obscure troubles are beginning to show, or if there is danger of them, special visits may be made. Those contemplating new buildings will do well to secure free advice to economize space and steps and time. A circular is now in preparation giving building plans.

A professor often takes off his coat and prunes a tree, with explanations, and then advises the farmer, who prunes the next one. The farm advisor movement is encouraged by the college paying the advisors' salaries, while the counties pay their expenses. Three advisors are already at work, two others have been appointed, and men will be sent to any county to address meetings on this subject.

Stereopticon lectures may be arranged free by any group of people who will furnish a good machine and a better operator. Outdoor and indoor improvement of the country schools and homes, playgrounds, rural festivals, rural education in agriculture, and consolidation of country schools are the main subjects.

Demonstration trains are sent to interested parts of the State in co-operation with the railroads to enforce with object lessons the practices advocated by the college.

Those wanting to buy dairy cattle or other stock may look over the lists of such stock for sale, which the University Farm at Davis keeps and to which all men with stock to sell are invited to send descriptions of such stock.

The time is coming when buyers even of grade cows will demand records of production of ancestors as well as individuals. This prospect is being met by cow-testing activities of the college. Any man may request from the college a "supervisor of tests," a man with feeding, breeding, and dairying experience who will keep official records of weight and fat content of individual cows at a cost of \$2.50 per day and expenses. Associations may lessen the overhead expense by dividing it among many who have their cows tested in one locality. An

association in Stanislaus county will co-operate in testing their grade cows, for this gives a definite basis of valuation and price. This is an advance step over the less uncommon practice of taking official tests of purebreds.

The college at Berkeley invites all farmers desiring help in their actual farm work to use the college as an employment bureau to secure students for the summer's work or graduates for permanent work. As Dean Hunt points out, these men are far more capable than most farm help, their physical condition is better because they know how to take care of themselves, and they are able to use more intelligent brains. There are now on file about 40 applications for student labor, and 500 would gladly be handled.

Soil samples taken according to directions and sent to the Division of Soil Chemistry, will be examined for alkali and lime if requested; and they may be examined for any one of the plant foods; but no complete analysis will be made, because such are of no value to the farmer.

All samples of whatever material sent to the University should be so taken as to be entirely representative, and should be accompanied by letters stating the purpose in sending and all conditions under which the material is to be used.

Water for drinking and irrigation purposes will be examined for its suitability by the Division of Agricultural Chemistry if samples are taken according to their directions in bottles furnished by them. Samples of fertilizers will be analyzed for a fee, but this is not encouraged, because the inspector is taking samples properly all over the State and the division enforces the law providing that fertilizers come up to the composition guaranteed on the tag with each package.

Seed samples are tested for purity and germination, 1100 having been tested in the year ending June 30, 1913.

Samples of milk and cream are tested for dairymen.

Creamery operators may send samples of butter to the University Farm at Davis for scoring contests. Reports and criticisms are sent to the makers, the butter is sold for the contestant at the highest price obtainable, and the only expense is expressage on the samples. Thirteen creamery operators sent butter for the March 10 scoring, who had never contested before for the awards of merit.

Expert work for the Medical Milk Commissions of San Francisco and Alameda counties is done by the Veterinary Division for compensation.

Free tuberculin and assistance in testing may be obtained by dairymen under certain conditions. Inquiries should be addressed to the Director of the Experiment Station.

Serum for hog cholera is sold by the University laboratory at cost, which is now about 2 cents per cubic centimeter. Enough for immunizing 52,000 hogs was distributed in 1913. But this is less than 10% of all swine in the State.

Irrigation investigations on alfalfa are being carried on with the co-operation of about 50 farmers in central California.

Black alkali land is being flooded

into underdrains on the University's Kearny estate to demonstrate this method of reclaiming alkali land.

A number of citrus growers who are to act as hosts to the party of students in the Summer Traveling Course in Citriculture will be awakened to many points of interest by the questions of

those who actively want to know.

Bulletins and circulars of information are sent free as published to all who request their names put on the mailing list. These tell of the investigations of the College of Agriculture and how they may be applied by practical farmers.

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Eternal Vigilance and Codling Moths.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Individual disasters often lead to widespread preventive measures, and if the experience of A. F. Baker of Sonoma county shall lead others to avoid his trouble of last fall, his loss will be gain for others.

Six times he sprayed his late apple orchard of 650 eleven-year old trees, 650 half as old, and 75 others, covering nearly fourteen acres. Three times he used lead arsenate at proper times to control the codling moth. It was about the middle of August that his engine broke down with only six trees to spray finally for the worms. About three weeks later, these trees were sprayed and bore practically perfect fruit while in the rest of the orchard 65 per cent were wormy.

A little over a ton of apples were sold at \$30; five tons were sold at \$7 per ton for drying, and three tons at \$4 for vinegar. About a hundred boxes were sold about town, at 50 cents for windfalls, 75 cents for hand-picked wormy ones, and \$1 for the good ones. Probably the total crop from the twelve or fourteen acres brought \$130 cash for apples.

Here is what happened in Sonoma county last year on late apples, as figured out by O. E. Bremner, deputy county horticultural commissioner: The second generation of worms, which usually live over winter to produce the first moths the following season, must have finished their life cycle and produced a third generation early in September. These of course, had unobstructed entry into the fruit, for such a thing was previously unknown and therefore growers were not prepared.

Pajaro Valley presents a different climate from Sonoma county, requiring different treatment at different seasons. In the latter county control of the codling moth is usually begun when the fleshy green base of the apple blossom, called the calyx cup, is wide open and the petals have just fallen. The purpose of the first spray is to fill this "cup" with poison which will be held ready for the worms which will hatch about three weeks later and try to eat their way into the new apple via the calyx cup. Of all wormy apples, 80% are estimated by E. J. Vosler of the State Insectary to have become so, through the blossom end. The apple skin there is tender enough to be swallowed by the worms, thus giving them the proper dose of the tasteless lead arsenate poison. The outside apple skin is tougher and is often rejected by the worms, so that a coating of poison, especially after the apples have grown to quarter size, would not bother the worms so much and later sprayings are less important than the first.

In the Watsonville district, on account of the earlier tussock caterpillars, worms, scab, and mildew, the apples are sprayed while yet in full bloom with a combination spray recommended by Horticultural Commissioner W. H. Volck for both fungus and insects. Iron sulfide, 12 pounds, is mixed with 16 pounds acid arsenate of lead (a strong burning poison whose injurious effects are nullified by the sulfide) and Bordeaux mixture 3-3-50 to make 200 gallons. Ten pounds

milled sulfur could as well be substituted for the 12 pounds iron sulfide. With varieties not subject to scab, or in weather unfavorable to this fungus, 10 pounds zinc arsenite might be substituted for the 16 pounds acid arsenate of lead, and water substituted for Bordeaux. If Bordeaux were used with zinc arsenite the foliage would suffer. The later poison is most soluble in the insects' stomachs and is therefore more effective, but is most likely to injure foliage.

Where fungus diseases do not trouble, a simple neutral lead arsenate spray is used just after petals fall. Mix 6 to 8 pounds lead arsenate paste or 2 to 8 pounds lead arsenate powder with a little water and dilute to 100 gallons with water. Certain other sprays may be as good but not so common. Mr. Baker used lead arsenate and sulfate of iron, four pounds of each per 100 gallons water.

In spring time, the worms, which have wintered over in rubbish, under loose bark, in fruit houses where they have escaped from stored fruit or in rotted holes in the trunks of trees, having grown to near an inch long, spin a whitish silky cocoon about a half inch long in which they pupate for twenty days. Meantime the cocoon has turned yellowish and rich dark brown.

At the end of twenty days they emerge as adult moths less than an inch long with a wing expanse about 3/4 inch. There are two pairs of wings, the fore pair being grayish brown with several gray or lighter cross lines and a brown spot at the tip of each, with two irregular golden lines. The back wings are lighter, not cross marked, but fringed with gray.

The calyx-cup spraying often startles a few of these early adult moths to flying, but they are in no hurry to lay their eggs. When they do, however, they lay many eggs for a month or six weeks on the leaves and twigs with a few on the young fruit. The eggs look like small, flat, pearly pin-heads. If weather prevents much flying, the eggs are laid quickly in masses at every opportunity.

A second spray is usually applied about two weeks after the first, using neutral arsenate of lead about 6 pounds per hundred gallons. Horticultural Commissioner A. R. Galloway of Sonoma county recommends the addition of 10 pounds prepared flour paste as a spreader and four pounds sulfur paste (atomic sulfur) or iron sulfide to check scab, and mildew. This second spray may be applied about April 20 this year to Gravensteins, at which time the later varieties may be about ready for the first spray.

The larvae hatch in a week or ten days and begin to crawl about and eat leaves and soon find the calyx end of the fruit where, if spraying was properly done, the poison cup and their appetites prove their downfall.

If spraying was carelessly done, that apple had better never been pollenized, for the larva eats to the core, spoiling it for sale, and develops around in the apple about three weeks. Then it comes out through the side and drops to the ground or a large lower limb. If to the ground, it crawls to the trunk of the tree and pupates under the bark.

If the orchardist has tied a strip of heavy cloth around the trunk a few

inches from the ground by a string and has then folded the upper edge down over the string, the larva is baffled.

Usually, however, it pupates and comes forth as a second generation moth to lay eggs for the second generation of worms. Of course with the multitudes of worms, more or less are coming on most of the time.

Gravensteins are harvested before the second brood becomes destructive. But on later varieties while you may get a great many, the expansion of the

apple will leave unpoisoned spaces where the worms may enter freely; or they may reject the poisoned skin and bore happily into the apple to your discontent. For this reason, the first spraying should have been extremely thorough to prevent a second brood. However, late spraying is better than none; and it is well to remember that the six trees Mr. Baker sprayed early in September bore nearly perfect fruit while the rest of the orchard sprayed not late enough for the extra brood of last year, was a practical loss.

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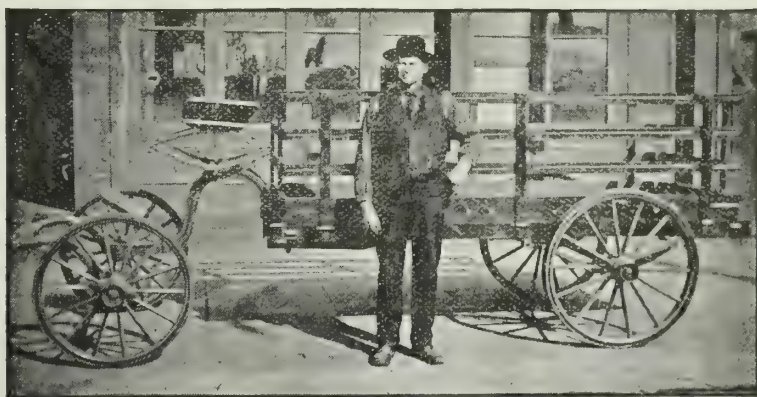
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Is the Short Prune Crop Due to Lack of Pruning?

To the Editor: The prune has again failed generally to set a crop. This is now acknowledged from almost all sections where it is grown. Why? The reason given is warm weather in March.

Such a position is absolutely unreasonable and untenable. The weather during and after the blossoming period was perfect. No rains, no frosts, no hot winds, no damp or chilly atmosphere; simply warm, genial skies portending anything but a failure of a fruit crop.

Some reports lead one to assume that orchards that were abundantly irrigated have fair crops, while others have none; this is not so, however. The light yield is general (with some exceptions, of course) in orchards of mature or old age.

Young trees, four to eight years old, may often be found to have fair to good crops, and sometimes all they can carry. Some orchards where trees have been cut back heavily, because of broken branches, and have thus had their tops renewed, are bearing fine crops on the resulting new and vigorous wood. This should be an object lesson to growers, but their only solace seems to be in blaming the weather.

The well-filled prune branch sent with this communication was cut from such a renewed tree, while throughout the whole orchard not so treated there is hardly enough fruit to pay for picking. These fruit-laden branches were much more exposed to the "hot sun" than any others, except the smaller and younger replants, which also are full of fruit.

On the east side of the valley, where the trees get the full force of the afternoon sun, we found an orchard of about eleven or twelve years old, full of fruit. These trees had been cut heavily, though not carefully or systematically, as evidenced by the abundance of new, vigorous shoots.

The prune industry is one of the most important in the State. The planting of new orchards does not sufficiently make up the shortage from the non-bearing older orchards. So far as I know, there is nothing being done to cause a thorough investigation, although we have abundance of machinery if it only be set moving. The State University and the Horticultural Commission have competent men to handle the scientific apparatus, but with them should be some of the ablest and most observing and experienced horticulturists in the State. Such a body should visit all the prune districts, and at once, gathering data and making observation. The result might throw some light on the subject.

I would like to ask any observing horticulturist: first, if the average mature or old prune tree in California is in a fit condition to bear fruit; and, second, why is it that the variety of plum we call "French prune" is allowed to get into its present condition, receiving practically no pruning, when all other plums are pruned systematically every year?

I wish to refer again to the publication in the RURAL PRESS of July 19, 1913, giving cuts of two average prune trees: one, a French "French prune tree" and the other a "California French prune tree," both, however, of the same variety and about the same

age. One bears fruit, and the other does not; again, why?

Morganhill.

LEONARD COATES.

[The questions asked by Mr. Coates and the reference he makes to the discussion in these columns which followed his article of July 19 last, are both very pertinent and will no doubt prompt all prune-growers to look about them. It does not occur to us that any such official visitation as he describes is necessary. All California pruning methods are the outgrowth of the experience of our practical growers, based upon forms demonstrated by experience to be good in Europe. California growers are perfectly competent to settle the question which Mr. Coates raises, now that he has so pointedly called their attention to it. We are ourselves quite disposed to agree with Mr. Coates' contention that our old trees would be in better condition to produce fruit if pruned for younger, stronger wood, but there are other questions also involved. We would like to hear what growers will tell us about what they see in their trees and whether they think, or have reason to know, that such a greater crop as they might get would be worth more than the cost of pruning for it. What we need on this subject is wider knowledge from closer observation, which growers are better fitted to make for themselves than any group of official investigators. The chief difficulties are, we apprehend, on the economic side: however, readers, let us know what you see and what you think about what you see.—EDITOR.]

SOUR SAP IN FRUIT TREES.

[Written for the PACIFIC RURAL PRESS by JOHN VAILLANCET.]

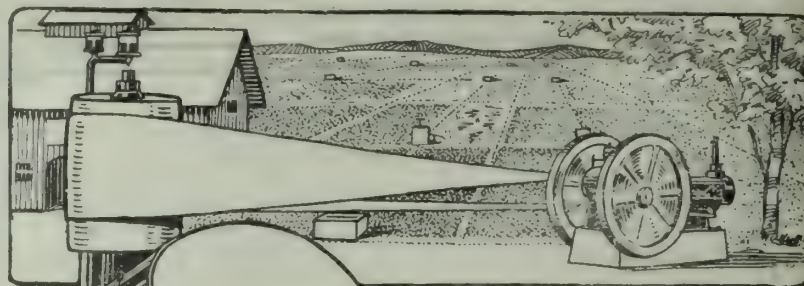
Many trees in the orchard this spring have been lost on account of sour sap. You will remember that four weeks ago we had extremely warm weather for about six days. In some sections the temperature ran up as high as 91°. At that time the sap in the trees was just beginning to flow. This unusual heat caused the sap to flow too quickly, and as the trees were just beginning to leaf out, there was no place for the excessive sap to find exit and it consequently drowned the tree,

causing almost instantaneous death.

I notice that the most fatalities seemed to be among trees that stood on the higher places in the orchards. One would naturally expect those planted in the lower places would be affected worse, but this is not so. The reason that more deaths occur among trees in the higher places is that the soil warms up quicker, hence a quicker flow of sap. This sour sap I have noticed in three and two-year-old orchards and those planted this

season. The almond, apricot and peach have suffered to a greater or less degree according to the condition of the trees at the time of the hot wave.

I hear the question, what can be done to save our trees from this dread scourge? I know of nothing. You can find out if the trees are gone entirely by examining the bark and cutting a little way in. You will notice a very sour odor emitted from the tree like old sour wine.



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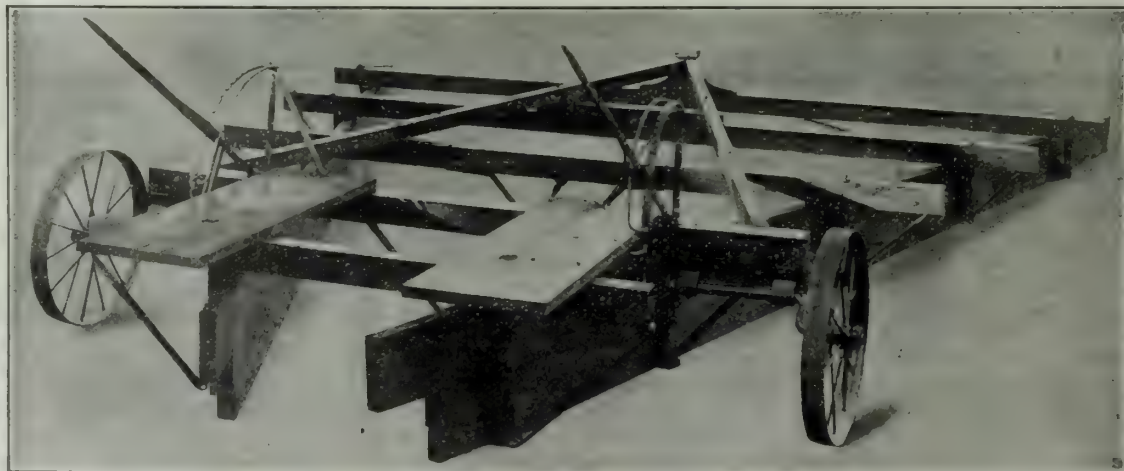
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Treatment of Citrus Gummosis.

By H. S. FAWCETT.

The best cure for citrus gummosis is prevention, by high budding on sour stock and provision of resistant conditions, but the grower who already has valuable low budded trees on heavy soils with a large amount of gummosis, wishes a remedy. He does not wish to start over again after ten to thirty years of work.

With the best of care some gum disease may occur from time to time in such orchards. It is almost impossible always to avoid all the causal conditions unless one could control the elements.

Having obtained soon after the beginning of our experiments some evidence that fungi were playing a prominent part in citrus gummosis, experiments were begun in co-operation with a number of growers in treating diseased trees. The requirements of a mixture to be applied appeared to us to be: (1) effectiveness in killing out fungi, (2) lasting qualities, (3) inexpensiveness, and (4) lack of injury to the bark.

The concentrated Bordeaux mixture was one of the most effective fungicides known; it had lasting qualities in sticking on through rains, was inexpensive, and was known to have been safe and had given good results for similar troubles in Florida. A number of other fungicides were tried, but the Bordeaux paste appeared to give better average results than any of the others.

The causal conditions surrounding the trees where these were unfavorable were first improved as far as possible. It was found in watching the effect of many different methods of treatment carried out under similar conditions, that it was best to vary the surgical operations to fit the different requirements of the two kinds of gummosis, because of the different ways in which they attacked the bark.

TREATMENT FOR BROWN ROT GUMMOSIS.—The best results in the brown rot gummosis in which the bark is killed through the wood as fast as it progresses, were obtained by trimming out the bark an inch or so beyond the killed margin and painting the cut surface and the entire trunk with Bordeaux paste. If this was done when the area of killed bark was small, the infection could be stopped readily without much injury to the tree. The Bordeaux paste on the live bark all around the trunk kept it from being reinfected. The orchard should be carefully inspected at short intervals to find the cases when they first begin.

SCRAPE OFF THE GRAY FUNGUS.—In the gray fungus gummosis the outer bark is often dead over large areas, while the inner bark and cambium is still active and alive. In this case, instead of cutting away this bark entirely and destroying the still active cambium, the dead outer part may be scraped off, leaving the inner live part attached. In this case as much of the live cambium as possible should be saved. The entire trunk down over the bud union is then painted with Bordeaux paste as in the former case.

Trees treated eighteen months ago for the gray fungus gummosis in this way are healing well. The bark checked somewhat after this scraping and some gum continued to ooze out for a while, but the final results were

good. These experiments and many others more recent are being watched to determine uncertain points.

The exposed areas of wood where bark has been cut away in treating either of these diseases should be covered after healing is beginning about the edges with something to keep it from drying out. Various coverings are good. Among these are asphaltum paint and shellac.

BORDEAUX PASTE.—The formula for Bordeaux paste is as follows:

One pound of bluestone (copper sulphate) dissolved in three quarts of water in a wooden or earthen vessel. The bluestone can be dissolved most easily by placing it in a sack and letting it hang just below the surface of the water. Two pounds of unslacked lime, slaked in about three quarts of water.

Stir together when the lime has cooled, making a light-blue mixture about the consistence of whitewash. If it turns another color before being applied, something is wrong. Mix up fresh each day or two, for the mixed paste tends to deteriorate with age. It may be applied with a large brush as whitewash. In case the Bordeaux paste is being used over a considerable period of time, larger quantities of lime and bluestone should be prepared separately and kept in two different barrels so that about enough slaked lime and dissolved bluestone may be mixed as needed for each day's use.

PREVENTIVE TREATMENT.—On heavy soils where trees are too deep and there is constant danger from gummosis, the soil should be dug away from around the trunk and the Bordeaux paste applied to the trunks of all the trees in an orchard as a preventive measure. It seems certain that this will help to prevent infections during excessively wet weather from winter rains. Prevention rather than cure is what we should strive for, and the Bordeaux paste must not

be allowed to become a substitute for the care in avoiding the causal conditions. It should rather be used as a temporary relief for those cases which we have not been able to prevent by other means.

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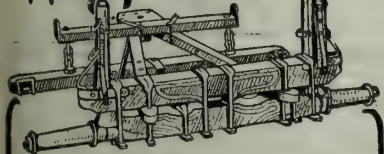
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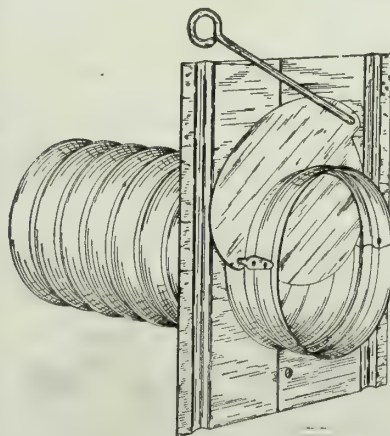
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Arizona Sorghums Under Irrigation.

By G. A. ALKIRE, Glendale, Arizona.

Most all the sorghums used in this valley are planted in June, July, and August, after grain or hay harvest, as a second crop.

On this ranch we irrigate the ground thoroughly and as soon as we can get on it, use a 10-inch lister with four mules, cutting six inches deep. We follow with a bean planter, one man and an old mare working it. The man that runs the lister gets tired after a time, and we find it pays to use the extra tool and man. Be careful to have the plates in place and test them to see that the seed drops right. If the holes are not right, babbitt them up and drill new ones. Drop the seed 10 to 14 inches apart, according to the kind planted.

After it comes up we harrow twice, once up and down, then across the rows. When the plants are about a foot high we go over it about twice, generally after irrigation, with the disk cultivator.

We let the leaves curl up some on the plants before watering, as it makes them get a better hold on the ground. We are sure to water when the heads are just out of the bloom if it does not rain.

We harvest the grain by topping, throwing the heads in small piles to cure, picking it up later in wagons and hauling to central pile for the thrasher. Piles of Milo or Jerusalem corn too large will heat and spoil in a short time.

We grew quite an acreage of white feterita this last season, and it did well; stooled out from two to four stalks and then ratooned from the stalks as many more; is a most beautiful sight in bloom, and the fodder stays green; does not dry up like Milo after headed for quite a while. There is much leafage and it makes a succulent feed. The horses and cattle even paw after the roots.

The heads are all erect; do not crook over; grain is softer than any of the sorghums except Jerusalem corn, has no tannin, and feeds better in every way; the birds did not seem to bother it like the other grains. It matures in about 100 days, though it might do better than that under dryer conditions. But it takes good old hot weather to induce any kind of sorghum to make much grain.

Kowliang is the finest forage sorghum, though a very indifferent grain maker; it stools out, makes a lot of heads and finishes them; then ratoons off the stalks and finishes more heads and then tries it again; think the frost is about the only thing that stops it; makes a perfect jungle of feed, and stands up pretty well; is fine stalked with lots of leaves. Sown broadcast, we mowed it after the first seed heads had finished. Then it sprouted and made twice as much as the first lot. It's a wonder and all classes of stock eat it well, though it has a very hard heavy grain.

We think Jerusalem corn is the best fowl feed grown. They all take to it as though they wanted some more, and the egg crop improves with its feeding. The cattle and horses eat the

stalks readily, but eat the feterita first, Kowliang next, then Jerusalem corn, and last Milo maize. We find that dwarf Milo maize planted in early June made a growth of 5 to 7 feet and small indifferent heads; while seed from the same sack planted in late July made 2 to 4-foot stalks and an abundance of grain; more than twice as much threshed grain to the acre. After Milo is headed, the stalks dry up fast, and to my notion are about as nutritious for feeding as old discarded newspapers, though they might be good for goats.

Egyptian wheat did not do so well for us this season. We planted it early and it loafed along; then we fed it off in June and it looked mighty sorry. We had plowed the land with a tilling machine, and went down 12 to 16 inches. That new ground did not take water like it should, and may have been part of our trouble. Some scattering stalks over the ranch made fine yields, but was not enough to talk about.

We have graduated from the ordinary sorghums, as they are too hard on the ground. The Milo is in the same class; it is hard to get a seed bed where it has been grown the year before.

We find that dwarf stuffs come dwarf but each year they get taller and are soon standard stuffs.

We have had fair success with Indian corn, but it takes rain to make it yield, and then local labor does not know how to harvest cobs.

We are going to drill in some Egyptian wheat with our alfalfa during the summer to make a lot of feed for the fall.

Much of the Milo and sorghums are fed in the field in this country, which is a wasteful practice so far as the grain is concerned; it seems about one-third goes through the animal whole. Where it is ground or crushed they make good use of the grain. We put it in a big caldron and cook it. The hogs do fine and also fowls. Sheep will not eat nor horses; the cattle nibble at it some, but prefer the ground feed.

Where it is fed in the field they trample it down and much is wasted unless the hogs are turned in; and they do not make the use that they should.

In planting, too much of the sorghums are thrown at the ground and then scratched in, and of course the result is about what one ought to have for work half done.

We have found Kowliang corn not profitable here; the stuff does not make a heavy enough yield, and the birds eat what comes along, in the milk; the fodder is fair, but the feterita is far ahead.

We tried corn binders on some of the stuff, but either the men that tried to run the machines did not know how or the sorghum was too much for the binders, we cannot tell; they would whack away at it for two or three days and then pull out and not come back and the work was fierce.

Men with butcher knives make the best headers we get, and they will contract from \$3 to \$5 per acre; it is the best way.

It costs us about \$8 per acre exclusive of the water and land to grow and harvest for seed, and feed the stalks in the field.

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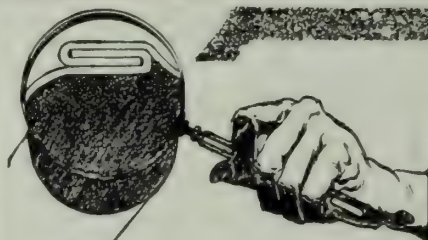
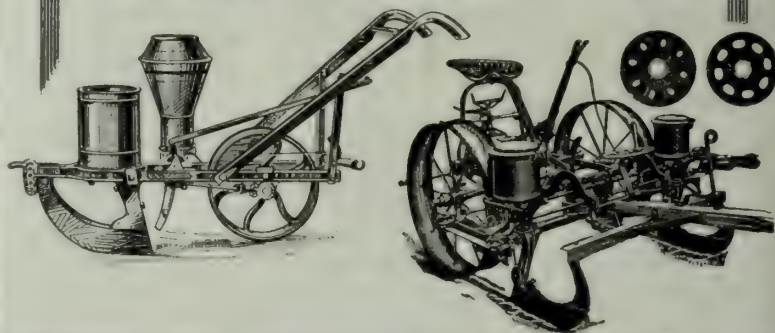
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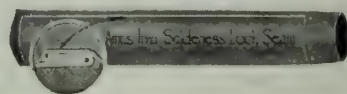
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Black Seeded Chillian.....\$1.00 per lb.
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Other High-grade Seed at "Low Price and No Price Can Buy Better."

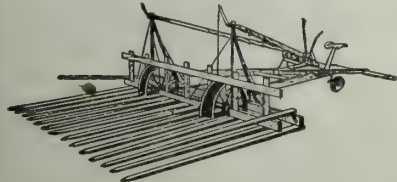
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Sonoma Lawton Blackberries.

[Written for the PACIFIC RURAL PRESS
by R. E. HODGES.]

The lovely hills of the Sebastopol-Forestville fruit district of Sonoma county, alternating small apple orchards with soldierly platoons of Lawton blackberries, are lovelier still when you find that it is not a section of large ranches sublet to short term tenants, but that each rose covered cottage on each small ranch shelters a happy family who make their living from a few acres.

One of these families, who would scarcely trade places with any of the scions of wealth or nobility is that of L. Hillis on whose ranch are four or five acres of well kept Lawtons besides many fruit trees. A little disaster like the short hot spell of last July, which cooked half of his 16-ton crop of berries before the pickers were vanquished by the heat, is a set-back; but by no means seriously disturbs their tranquillity. There were many berries already gathered—enough to be thankful for.

When new Lawton blackberry plants are wanted, one goes into an old patch anytime before the last of April and digs up the sprouts which come plentifully all over the surface from buds on the roots. One or two of these are set eight feet each way and well cultivated for two seasons. (Much ground might have been saved at the expense of additional labor, if the sprouts had been kept in small beds close together the first year.)

In June of the second growing season, or when they are four feet tall, Mr. Hillis clips off the end buds to make the canes stocky and to force the growth of laterals which are clipped to about 15 inches in July.

In the winter two years after setting out, two stakes are driven outside each hill about 4½ feet above ground and the canes are wired loosely to them.

Clipping the laterals in July forces out secondary laterals which ripen about half a crop 2½ years from the original transplanting. Tertiary laterals also share in the crop bearing.

In this same season, new main laterals grow from the old cane and bloom early in July, ripening clusters of berries on their tips through September and a little into October. Last year, the second crop buds were scarcely open when the hot spell made the patch look as if a fire had passed over it. The berries matured but many showed dried seeds due to the heat. Never before had such a hot spell occurred however. These second crop injured berries had poor keeping qualities on the vines and would scarcely be good when picked every four days. In previous seasons, if help was scarce, it might be ten days between pickings.

At any time after bearing, the old canes are cut off at the ground to leave plenty of room for the new canes which will bear next year. An advantage might be gained in reducing chance of disease, by cutting out the old canes in the fall; but disease has not hurt Mr. Hillis and he does not spray the berries at all.

Cultivation consists of three plowings in the spring, the first time throwing dirt toward the vines late in March or in early April. Next time the dirt is thrown away and the third time in June as late as he can get through easily with a horse, the dirt is thrown

toward the plants again in the other direction.

About four-fifths of the blackberries from this district are canned, mostly being sent to Santa Rosa, while one-fifth are shipped to eastern and northern markets. Sonoma county produces more canned blackberries and Loganberries than all the rest of the state combined according to R. I. Bentley of C. F. C. A.

Shipments of Lawtons was pioneered by the man who introduced them in this district and who shipped them out in chests painted red, white, and blue with the legend on the ends, "Buy Barlow's Berries." Mrs. Barlow still has a large plantation to which annually come a summer campful of boys from an institution in San Francisco to get brown and rich picking the fruit.

TEST THE THOROUGHNESS OF SPRAYING.

[Written for the PACIFIC RURAL PRESS.]

Last winter I saw some Chinese spraying a mixed plum and peach orchard with Bordeaux. I wondered what they were spraying for and then I saw the light. They were spraying for a dollar a day. If they had been spraying for fungus diseases or insects they would not have splashed the tree here and there mostly all over, but they would have kept the pressure up and over 200 pounds to drive the spray into every crevice, doing a good job in the same time. They would have sprayed the top of the tree first so that drippings would help to soak the trees and save spray. They would have turned their rods to direct the spray to the under sides of the limbs, for they had a nozzle fixed at 45 degrees to the rod, furnished by the owner of the ranch. They didn't economize on spray, which would be entirely proper if they had directed it toward the branches. Saving spray means saving worms and diseases which save you the trouble of handling money. A chain being no stronger than its weakest link, the second generation of worms will be no smaller than the multiplied maximum of first generation worms missed by poor spraying.

Bringing things down to the present, it may be interesting to cut lengthwise of the core a few of the apples you sprayed when the calyx cup was open and see if the poison reached the bottom of all of them. Then band your trees as mentioned in another article and see if many first generation forms matured enough to pupate and furnish a second brood.

APPLE BILL IN JEOPARDY.

Word has just been received that H. R. bill 11,178, standardizing the apple box and pack, which was introduced by Hon. Judge Raker on December 22 and referred to the Committee on Coinage, Weights and Measures, and on which a hearing was held before that committee February 11 and 12, "has been laid on the table for this session."

A strong effort will be made by Congressman Raker to have the bill taken from the table and acted upon at this session, in which effort he should be strongly supported by all interests having this bill at heart. Strong telegrams and letters should pour in upon Hon. Thomas Hardwick, chairman of the committee, urging

that this matter be taken from the table and acted upon at once.

Letters and telegrams of the same character should be sent to the representatives in Congress urging them to use their influence with the committee to have this done.

Much time, money and effort have been spent in bringing the public to a united support of this bill, and the time for action is now.

Public sentiment is a strong factor in securing action, and a strong demand will doubtless bring the result.

Let every one consider himself a committee of one to do something, and do it now.—C. E. WHISLER, President Oregon State Horticultural Society.

[Endorsed by State Horticultural Commissioner A. J. Cook.]

CAUSES FOR SOUR SAP.

To the Editor: Immediately following the last warm spell, I was unfortunate enough to lose quite a few almond trees in Yolo county. The man in charge of the place calls it sour sap. Can you tell what is the cause of this, and what is the remedy? Only a portion of the trees were affected in this way. The trees were planted some two years ago, and were regularly watered during the period of drought. One would suppose they would be able to take care of themselves by this time.—W. M., San Francisco.

["Sour sap" is fermentation within the bark and sap wood due to lack of circulation fast enough to elaborate the sap into plant tissues before it spoils. An overabundance may cause it in springtime, in which case slitting the bark to allow its escape is considerably practiced, but undersupply of sap is the most general cause this year of the widespread loss by sour sap. The rains of the past winter have rotted the fine root hairs which are almost microscopic and which supply the sap to the trees. Unusual dryness would destroy them, too. In either case, there is slight circulation, the sap already in the tree ferments, and the tree dies. Special care and judicious fertilizing may save the trees by feeding the few root hairs that may remain until more are developed, but it is usually better to replant and have vigorous trees.—R. E. H.]

SEEDS, PLANTS AND TREES.

Don't fail to write for my new free Catalogue and Garden Calendar specially prepared for California. It tells when and how to plant all kinds of Vegetable and Flower seeds, trees, plants, together with descriptions of the most desirable sorts.

THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

ORANGE SEEDLINGS

CHOICE FLORIDA SOUR
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\$10 Per 1000

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704 Bryant St., San Francisco

AGRICULTURAL REVIEW.

Many Prunes Dropped.

Many of the second-size prunes which at our last week's report were doubtful until warm weather should make them grow or drop, have dropped, especially in Santa Clara valley. However, in the tops of trees a considerable proportion have stuck. Buyers now in the field are offering 6 cents basis, but this can scarcely hold because jobbers feel they can buy at that price when the crop is mature and do not care to risk a drop. A contract was recently made at Sacramento for \$12,500 worth of 1914 prunes at 4¼c basis.

Summer Soil Moisture.

A bulletin from the Nebraska Experiment Station is of interest to Californians: "Spring wheat, oats, barley, and corn feed to an average depth of four feet in this soil, a fine sandy loam. Winter wheat feeds to a depth of six or seven feet. Alfalfa and grasses use water from greater depths.

"Weeds are the greatest agency for the loss of water from the soil. Preventing weed growth has been more important from the standpoint of storing water in the soil than cultivating the soil to produce any kind of a mulch.

"The storage of water is summed up in keeping a loose, rough surface to absorb the rains quickly, and in preventing growing vegetation from using the water."

A Live Wire High School.

The Esparto Union High School sends us a very artistic Rural Life Movement number of their students' publication. It shows them to be a very live bunch working in the right direction. Their girls get school credit for domestic science work done at home, and the boys for agricultural and manual training work at home, an idea originated about nine years ago by L. A. Alderman, now Superintendent of Public Instruction in Portland, Oregon. Special school equipment for such courses at Esparto was out of the question, and the use of home equipment is more practical, anyway. An exhibition of some of the work of the girls recently called forth great enthusiasm among students and patrons, and six prizes were given. The boys could scarcely exhibit their agricultural work. But isn't this a tremendously better way to use the energy of youth than to encourage dangerous and questionable amusements?

California in the Citrus World.

(From bulletin by F. O. Wallischlaeger, secretary of the Citrus Protective League of California, the following mathematical facts give us a sound basis for getting a new hat, citriculturally speaking.)

The citrus fruit crop of the world is equal to 90,000,000 to 100,000,000 boxes of California capacity, or from 230,000 to 250,000 carloads of California size. The five most important countries in the order of their production are: the United States, Spain, Italy, Japan, and Palestine. The United States and Spain each produce approximately 30%, or 68,000 carloads; Italy, 25%, or 58,500 carloads; and Japan and Palestine each less than 5% of the world's production.

Potentially the United States is of more importance as a producer of citrus fruits than any other country in the world. The acreage is increasing steadily in both California and Florida. The normal production of the United States is now approximately 78,000 carloads. There are nearly 200,000 acres of oranges and lemon trees in California, approximately two-thirds of which are in bearing and one-third of non-bearing age. A normal crop of citrus fruits in California is now 50,000 carloads, and when the lemon acreage now planted in California is in full bearing it will produce more lemons than are consumed in the country at the present time.

U. S. IMPORTS CITRUS FRUITS.—Bearing the above figures in mind, the producers of oranges and lemons should consider the position which the United States holds in the citrus fruit commerce of the world. Oranges, lemons, limes, and grapefruit and their products are now imported into the United States from Porto Rico, Cuba, Jamaica, Honduras, Japan, Italy, and other countries. The production is increasing in most of these countries also, and the consumption of citrus fruits throughout the world has kept pace with the increase in the production.

INCREASED ACREAGE IN CALIFORNIA.—In the ten years from 1903 to 1913 the total area in citrus trees in California has increased from 83,657 acres to 191,357 acres, an increase of 128.9%; orange trees increased 138%, and lemon trees increased 82% in the same time.

The total area in citrus trees in California in 1913 amounted to 191,357 acres. Of the total acreage, about 83% consisted of oranges and 17% of lemons, 64% was of bearing age, and 36% was of non-bearing age. Of the bearing acreage, 85% consisted of oranges and 15% of lemons, and of the non-bearing acreage 79% consisted of oranges and 21% of lemons.

Cheap Fares West.

Railway passenger agents from all the principal lines of the United States have just finished a meeting in San Francisco, at which a one-way fare for the round-trip to the Exposition, with 90-day limit, was agreed upon. Tickets will be on sale every day at all stations.

State Horse Association.

A State Draft Horse Breeders' Association, so long desired and much needed, is to be formed at University Farm, Davis, May 16, 1914, the meeting to commence at 11 a.m. This is the date of the annual picnic. Professor Gordon H. True is sending out the call for all interested to be there or send a note expressing interest.

Organizations.

The Denver Irrigation Conference exceeded the hopes of its promoters, both in attendance and interest. Fifteen States were represented by 300 delegates, 30 from California. Investing postal savings deposits in irrigation bonds rather than depositing them with national banks at 2½% was urged. The conference favored government loans for great irrigation projects such as the one for Kings river. Secretary Lane favors a \$100,000,000 loan to complete all government

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Superior Buck Rakes and Stackers

the most economical hay handlers made

They have the best horse lift and a boy can operate them. They are light so the team can move easily and quickly—yet very strongly made so as to carry the largest load without breaking. All wearing parts may be easily and cheaply replaced when worn.

Call or Write for Further Details

There are many other superior features of "Superior" goods that we would like to tell you about. We also sell a full line of Stackers, Hay Loaders, Side Delivery Rakes, Hay Presses, etc.

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NEW! Note the Support Under the Scroll

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In addition to this new feature, we call your attention to other Bean advantages—

AUTOMATIC WATER BALANCE—the most perfect balancing device ever put onto a centrifugal pump.

WATER SEALED STUFFING BOX—which makes it unnecessary to tighten stuffing box nuts excessively. The water makes an air-tight seal.

ADJUSTABLE SUCTION AND DISCHARGE. Note the illustration. Easily and quickly turned to any desired angle.

RING OILING BEARINGS—another desirable feature. If you are interested in centrifugal pumps

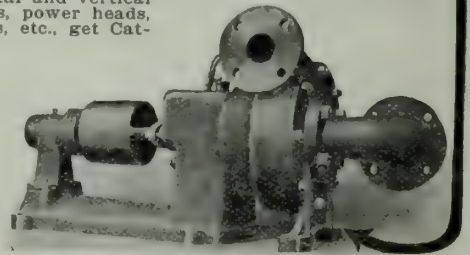
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It describes all Bean horizontal and vertical pumps. For deep well pumps, power heads, windmill pumps, house pumps, etc., get Catalog 28-B.

Write to us about your irrigation requirements.

Bean Spray Pump Co.

211 W. Julian St.
SAN JOSE CALIFORNIA



SURFACE IRRIGATION PIPE

GALVANIZED SHEET IRON
4—5—6 inches. 10-ft. lengths

PRICES RIGHT

201 Main St., San Francisco

reclamation projects and to carry on new ones already demanded. An international irrigation conference will be held in Calgary the first week of October.

Preliminary organization at Woodland of a local of the California Cured Fruit Exchange was effected last week at a meeting addressed by J. W. Jef-

frey. This makes 24 locals in the Exchange, which is only a little over a year old.

A permanent Olive Growers' Association to disseminate free to anyone desiring to plant olive trees, full and correct information as to location, soils, varieties, planting, and cultural methods, irrigation, and other require-

Stack Your Hay and Alfalfa Use Salt

Have you ever lost a crop of hay through musting—or your barn and hay through spontaneous combustion?

There is one sure way to prevent this—

Use Salt

when you stack the hay.

The salt more than pays for itself in the weight of the hay. There is a further gain in weight through moisture held—and the stock will eat up salted hay clean where unsalted hay will be mussed over and wasted. 20 pounds of salt should be used to each ton of hay. Stack three feet of hay, sprinkle the salt over this by hand. Then another layer of hay, more salt, and so on.

It Pays

Red Spiders and Mites

Controlled by Spraying
with

Atomic Sulphur

(Atoms of Sulphur)
in paste form.

Also most effective form of sulphur known for mildew on grapes.

Atomic Sulphur is effective and safe to use.

SEND FOR BOOKLET R.P.

It gives specific information for controlling the more important insect pests and fungus diseases. Don't fail to have a copy—it contains valuable information for you. Send today.

General Chemical Company
of California,

Royal Insurance Bldg., San Francisco.

ments for the successful growing of the olive, is to be formed at the Marysville Chamber of Commerce, April 25, as decided at a previous meeting.

Stockholders of the Sebastopol Berry Growers and the Sebastopol Apple Growers' Union voted to consolidate and appointed their boards of directors to draft a plan. Of the sixteen directors, four in the apple union opposed consolidation and the plan fell through for this year because no suitable plan was formulated. Buildings and shipping facilities will be brought to one location when the two organizations do join forces, and the strength of the growers in dealing with outside buyers and Western canners will be increased.

Oranges By Varieties.

The comparative importance of the different varieties of oranges, with their approximate shipping season, according to F. O. Wallschlaeger, secretary of the Citrus Protective League, is as follows: Washington navels, 27,000 cars, shipped principally in November and December from northern and central California, and from December to June, inclusive, from southern California; valencias, 8500 cars, shipped from June to October, inclusive; seedlings, 1000 cars, shipped from March to July, inclusive; and Mediterranean Sweets, 2000 cars, shipped from March to July, inclusive. Other varieties, including St. Michaels, Thompson's Improved Navels, Ruby Blood, Malta Blood, Jaffa, Tangerines, and Navelencias, amount to about 1500 cars. The above estimate of shipments for different varieties is based upon the shipments of a normal year.

Italian Farm Adviser.

Influential Italians are starting a movement to obtain a farm adviser who can hear and solve the troubles of their own people in their native tongue.

Large Land Deals.

Ninety dollars per acre for 6,500 acres in Napa and Sonoma counties, including 1,500 acres unreclaimed, is the price paid by Dr. Morton of Los Angeles.

The Egbert district of 8,000 acres in Solano county is being drained of last winter's floodwaters by two floating centrifugal steam pumps, one of which throws 60,000 gallons of water per minute. Pumping this tract is cheaper than levee protection.

Civil Service Examinations.

Poultrymen who wish positions at any of seven State institutions at \$45 to \$60 per month, may apply for examination blanks from the State Civil Service Commission on or before April 25. Examination includes only physical ability and poultry experience.

Applications for similar examination for dairymen at ten State institutions, salary \$45 to \$85 per month, will be closed April 25.

An entomologist examination to fill the position of assistant secretary to the State Horticultural Commission will be held at Sacramento May 2. The entrance salary is \$1200 per year. The examination will be technical.

FLORIDA SOUR ORANGE SEED BED STOCK.

Grown without shade; they transplant much more successfully than shade-grown trees. We have the largest and best stock of seedlings as well as a good stock of Navels, Valencias, Eureka Lemons, and M. S. Pomelos. Send in your orders; now is the time to plant.

SOUTHLAND NURSERIES,
F. H. DISBROW, Prop.,
2141 E. Colorado St., Pasadena, Cal.

National Interest in State Farm Laws.

A note from Senator T. P. Gore, chairman of the U. S. Senate Committee on Agriculture, requests information regarding State legislation of special benefit to farmers, with any suggestions for national legislation with the same purpose.

Poultry.

In the Northwest, poultry tuberculosis is becoming serious, so that the Oregon Agricultural College has issued a bulletin outlining treatment. It is even suggested that a man might make a good living in Sonoma county convincing poultrymen that their fowls are suffering from the same disease. It is difficult to detect, and is often well established before it is discovered.

The San Mateo County Poultry Association will hold its annual meeting for election of officers, May 5, at 8 p.m. in San Mateo Union Hotel.

CASIFIED ADVERTISEMENTS

Rate 3c per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns

WANTED.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Men and women in every locality to sell our new patented household articles. Never has been shown. New, attractive, easy sold. Good profits, exclusive territory. PACIFIC COAST NOVELTY CO., Hibernian Bldg., Los Angeles, Cal.

WANTED—Position as manager of a large orchard. Best references and many years experience. Address Box 19 Pacific Rural Press.

GOOD WILLING MAN, age 34, wants farm work, orchard or garden preferred. KOREKIN, 2910 Fulton St., San Francisco.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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VICTORIA, AUSTRALIA, WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California no extreme heat or cold. Small deposit and 3 1/2 years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairying, horse raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Box W, 687 Market St., San Francisco.

FOR SALE—110-acre fruit ranch in the famous Bartlett pear belt of El Dorado Co., under ditch; 3/4 of a mile from town and railroad. This place is highly improved and will make anyone a fine fruit and dairy ranch. Two good orchards, one of large, bearing pears and the other miscellaneous fruits. Good fruit and hay crop coming on. All stock, tools, and implements go with place. \$10,000. For particulars address J. M. STICKLAND, R. D. No. 1, Placerville, Cal.

FOR SALE OR TO LEASE—An irrigated, well improved, alfalfa ranch in the interior valley of California; will take care of 50 cows and 150 hogs now, and 150 cows and a proportionate number of hogs within two years. Ideal location within three miles of railway station. Or same can be leased by responsible party with means or able to give proper security. Address Box 83, Pacific Rural Press.

FOR SALE IN MARIN COUNTY. 485 acres at \$75.00 per acre. Dairy and general farm, two dwellings, barns, plenty water; to settle estate. 164 acres, \$17,500.00. Truck farm and dairy; new buildings, tools, wagons and live stock; about 3000 cords of wood can be cut; water abundant. LEROY G. HARVEY, 518 Montgomery St., San Francisco.

FOR SALE—150 acres in South San Joaquin Irrigation District, two miles from Manteca; county road on two sides; one-quarter mile from railroad facilities; \$125 per acre; easy terms. Inquire of E. POWERS, Manteca, Cal.

TREES AND NURSERY STOCK.

FOR SALE—Peach, apricot, plum, prune, fig, apple, pear and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants; elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRINK & KOHMAN, Nurserymen, Box 1212, Fresno, Cal.

BURBANK'S SPINELESS CACTUS. We are offering for immediate delivery the improved forage and fruiting varieties Burbank cactus. We guarantee all plants true to name. A liberal discount on orders for 1000 leaves. Send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or Jesse I. Jewell, Mgr., Santa Rosa, Cal.

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BERRY PLANTS AND RHUBARB—Everything in small fruits for garden and orchard. Send today for price list. Louis F. Scribner, Pasadena, Cal. R F D

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Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna Route 3, Riverside, Cal.

If you intend to plant OLIVES or RHUBARB, write for my free booklet. Alta Vista Nursery, Highland, Cal.

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STEAM HARVESTING OUTFIT FOR SALE—BEST ENGINE, HOUSER-HAINES HARVESTER (SEPARATOR NEW), OIL WAGON, WATER WAGON, COOK HOUSE, TOOLS, ETC., everything complete for the field. ALL IN FINEST CONDITION and offered at a BIG BARGAIN. Terms. Entire outfit can be seen in Stockton. STOCKTON ICE & FUEL CO., 33 South Eldorado St., Stockton Cal. PHONE 47.

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ORCHARDISTS: For sale very reasonable, JOHNSON IMPROVED TRACTOR. Good as new. Takes place of 12 horses. Just the thing for your orchard. See J. A. WINKELMAN, Mayhew, Sacramento County, Cal.

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Constructive Agriculture—No. 16.

Exposition Will Help California Breeders.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Every breeder of pure-bred live stock is aware that next year California is to have her supreme opportunity of showing to the world the natural resources and possibilities that the State possesses along live stock lines, as well as demonstrating that we have kept up with the procession in breeding tactics as well if not better than many of those States and countries which now smile in derision when we talk of having good stock.

OUTSIDE AID.—This opportunity is to be afforded us through the efforts of the live stock division of the Panama-Pacific International Exposition, who as a company, uninterested in live stock, except as that live stock enters into the general scheme of making the undertaking a financial and educational success, are devoting 65 acres of extremely high-priced land, \$175,000 in cash for prizes, and many thousands of dollars in buildings, salaries, etc., to the industry.

Although some five millions of the money being spent in making this and other features of the exposition a success, has been appropriated by the State, or in a broader sense by the taxpayers, it was so appropriated with the understanding that the State is to receive this money back as soon as it has been made by the exposition company, and before the other shareholders, such as the city of San Francisco or commercial bodies of that city, receive any return whatsoever.

In a sense, then, we may say that to date the only efforts made, with any chance of financial loss, in giving the live stock industry due attention to the visiting public, has been made by the merchants and the city of San Francisco, who are, as we must admit, interested in the welfare of the live stock industry of California in a very indirect way.

With the necessity of keeping the undertaking in the light of an international affair, all the way through, the exposition company has been compelled to offer its prizes for international competition, which means that their prize money will be competed for by the best breeders in the world and that the breeder from California will be compelled to depend entirely upon his ability to beat this stock, if he is to receive any cash remuneration for his efforts.

OTHER COUNTRIES HELP.—Now California breeders are, we believe, as good sports, when it comes to fair competition, as one will find anywhere; and are not asking any favors in the show ring, but as many of our breeders have put most of their capital into their herds, and are still young in the business, it does not seem fair nor just that they should depend entirely upon their ability to beat the field in order to receive some remuneration for their efforts. This view becomes more pronounced when we consider that most other States, and many countries, have appropriated money which will be used entirely as prize money for stock from those places. Unfortunately, the legislature of California has not seen their way clear to aid the breeders of this State in this way, due either to their ignorance of our live stock resources or to a lack of organized demand by

the live stock breeders, or perhaps both.

HELP NEEDED.

From a California standpoint, however, the thing which will help the State most from an agricultural viewpoint will be the permanent exhibits. While the competition for prizes will last only two months and will have to be shared largely by breeders from every country, these permanent exhibits, which are called view herds by the live stock department, will meet the eye of approval or disapproval of every visitor to the grounds, and in the way of advertising for California, are of still greater importance than the competitive tests.

Here we find that the burden of responsibility has been shifted to the county governments, all of whom have appropriated money to be used in telling the world of our wonderful agricultural resources. And the movement has been so favorably considered that a counties building is to be built, the floor space of which has been sold at \$2.50 per square foot to the various counties. With such costly floor space it is only natural that much more money will be needed in filling that space creditably, and that also has been provided for and is now being used.

As we predicted in these columns last September, the collectors for these magnificent exhibits have devoted their time and energy in collecting rare specimens of fruit, flowers, vegetables, and other agricultural crops, which of itself would be all right if some provision were also being made to collect an equally good display of live stock. But, unfortunately, nobody has learned a method of preserving farm animals in bottles or of packing them in fancy boxes, and so it seems we must be content to let our visitors infer that California is a wonderful fruit country but a poor stock country, for if such was not the case, would we not have shown our resources along that line also?

Those of our readers who are interested in the welfare of live stock in this State know that this condition is not right or just, either to the State or to the live stock interests. Instead of delaying longer, immediate steps should be taken to see that a part of this county money is used in maintaining a representative showing of live stock. There is still time for such action, but it must not be delayed, and if the breeders or other stockmen do not help themselves in this matter, they cannot expect outside aid, although that aid would soon develop if given a chance.

FUNDAMENTAL REASONS.—Fundamentally there is every reason why both State and county support should be given this proposed live stock exhibit, for in making it, the fact should not be forgotten that this exposition will bring visitors and buyers from all of the more important live stock centers of the earth.

Many of these men will be breeders or prospective breeders from such countries as New Zealand, Australia, and the Oriental countries. All these are markets which this State needs badly, and will be still more in need of as our herds become larger.

In the past, breeders from these countries have been heavy purchasers

from other States in this country, but have passed through California, which is their natural stopping place, in the belief that we were a fruit and agricultural country rather than a breeding center. The coming exposition will afford the best opportunity we could hope for, to demonstrate to these buyers that they have been misinformed, also that it would be money in their pockets to do their buying right here in this same California, where they already buy much of their dried and canned fruit as well as other agricultural products.

With the opportunity of their lifetime staring them in the face, with organizations already formed to make the best of this opportunity, and with a crying need for the advancement of

our live stock industry in evidence, it is hard to see why a longer delay is necessary. In face, we believe that the new secretary of the California Livestock Breeders' Association as well as secretaries of the various breed associations could not do a better work for their constituents than the carrying out of a program that would make a representation at the exposition possible.

If uninterested parties like the merchants of San Francisco or the city government of that city are willing to donate hundreds of thousands of dollars toward a live stock show, why should the farmers and breeders hesitate in spending a few thousand dollars in an undertaking which will repay them many times? Let's get busy.



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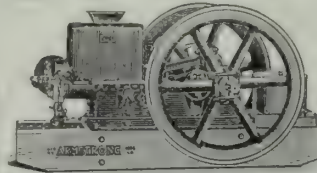
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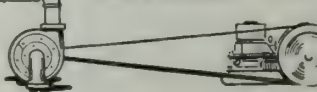


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I sell to the consumer Box shooks and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

E. F. WILSON, Stockton, California.

Veterinary Questions.

[Answered by DR. E. J. CREELY of San Francisco Veterinary College.]

SWOLLEN UDDER.

To the Editor: About 10 months ago the finest cow in my herd was bitten by a poisonous insect on the udder. It resulted in temporary paralysis of the hind parts and a badly swollen and inflamed udder. She got over the paralysis inside of two weeks, but her udder remains swollen and red and only three teats can be milked as the affected teat will only discharge a thick yellow matter. Is there a relief for that trouble and what is the cure, if any.—K. M., Turlock.

[Call in your veterinarian, have him treat the animal, if the udder is infected my advice would be to have him make up an auto-bacterin, and treat her with this. The milk from such an animal is dangerous to human health. After milking this cow wash your hands in an antiseptic solution, to prevent spreading the infection to the rest of the herd.]

ABSORPTION OF URINE.

To the Editor: I have a number of boar pigs which have sort of a stricture in the fore sheet. I find that this causes a large amount of urine to remain in the sheet and seriously affects their breeding. Could you kindly give me a remedy.—L. B., Turlock.

[Call in your veterinarian, operative measures may be necessary to correct this trouble, and proper antiseptic treatment. The general health of your pigs in endangered from absorption of the toxic principle of urine.]

LICE ON CALVES

To the Editor: Will you kindly tell me what to do for lice on young calves. I have sprayed the calves at different times but find that in the spring the gnits hatch out and do much harm to the young stock.—Dairyman, Bakersfield.

[This infection is not as simple as it may seem; dipping with a potent parasiticide, at the proper time will destroy the lice, it is necessary to be familiar with the life history of the louse. You will save time and money by calling in your veterinarian.]

BLOODY MILK.

To the Editor: My cow which has been fresh some time, gives clotted, bloody milk a while, then it is simply bloody, then it seems clean, after which the process is repeated.—A. B., Clarkesburg.

[Such milk is dangerous to human health. Your animal should be treated by a qualified veterinarian. After milking this cow the hands should be cleansed, and washed in an antiseptic solution so as not to spread the disease to other cows.]

DRYING A PERSISTENT MILKER.

To the Editor: Recently two of our cows calved. We decided to dry them up before calving. The first, a good cow, we could not dry. She gave some milk right up to the birth of calf. The calf died in one hour, cause unknown. The flow of milk decreased by fully one-third. The second cow with a small bag we decided to dry for two months before birth of calf. Calf was healthy and lived; bag increased in size and milk was fully double in quantity. We would like to know,

while in the second cow, drying apparently was in order judging by results; should we in the first case, the cow insisting on giving milk, have milked her right up to date in order to prevent injury to the milk system?—H. B. CO., Linden.

[The milk glands will continue to function as long as the cow is milked. Nature will take care of the milk secretion if the cow is not milked. Camphor applied externally to the udder will hasten the drying up process.]

CALF SCOURS INFECTIOUS.

To the Editor: Every two or three years my range calves get scours severely and waste away till they die in two or three months. I lost 40 last spring. Never had the trouble two years in succession but it is here again this spring. It usually affects only the yearlings and they never get well.—C. T., Kellogg.

[Your calves are no doubt dying from scours, this is an acute infectious disease of calves. Call upon the state veterinarian, he is always anxious to assist in these matters, prevention is the best way to treat this disease.]

BLOODY URINE.

To the Editor: Two of our calves, one or two months old, have died within 24 hours after we found them ailing and their bladders were full of bloody urine. The first symptoms were loss of appetite and lying down, usually with the head stretched out. Two others recovered after passing bloody urine. All were males except one which had a light case and recovered. We fed them half whole milk and half skimmed milk with a very little oil cake meal. They are in a small green pasture and drink well water. The cows have the same pasture at night. Will they take the trouble?—C. A. B., Sanger.

[My advice would be to isolate the sick animals and disinfect the surroundings; bury or burn the dead animals. Call in a qualified veterinarian, or write the State Veterinarian in Sacramento. He is always willing to assist in these matters. From your description of this disease it is acute and very probably infectious. If so, drastic measures need be taken to stop its spread.]

HEIFER HARD TO BREED.

To the Editor: I have a heifer that was fresh last April and she isn't with calf yet. I bred her to different sires and no results. She is in good condition and milks fairly well. Yet what can I do for her?—F. W. D., Corning.

[At last calving time she may have had the neck of the uterus lacerated and when healed would form scar tissue thus preventing fecundation. I would advise you to call a qualified veterinarian during the next period of oestrus and open up the osuteri.]

HOLSTEIN CLAIMS DUALITY.

Some of the reasons why Holsteins are considered dual purpose from the dairyman's point of view are given in the Western Farmer by Mr. David Munroe, of Spokane, who set a high mark for Oregon and other breeders at the recent Pacific International Show at Portland, by his exhibit of pure-bred show cattle, both as to type and test. In part, Mr. Munroe states:

"The men who stand eminent among those who have bred and developed the greatest dairy cows in the world, who are often called upon to judge at our greatest shows of dairy cattle, say: 'Strong in heart girth, large in middle, well equipped in the mammary features, not too thin at the shoulders, not too fine in head, are, in the order named, the first essentials in the outward appearance of the most desirable 'Holstein form.' The day has gone by when form takes precedence over performance, but form must always have proper consideration as indicating the vigor and physical ability necessary to great performance.

"Holstein cattle have been bred for over 2000 years to produce great amounts of dairy products and at the same time develop large meat production. This breed of cattle make the same claim today that they have for hundreds of years past; that they can and do produce in the greatest amount both milk and meat."

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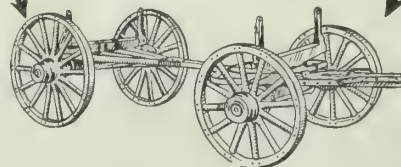
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160 Eleventh St., San Francisco.

Desert Pure-Bred Hogs for Market.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

Although the growth of the purebred hog business has been most remarkable in recent years, it is an innovation to see a hog ranch that has only purebred boars and brood sows, catering exclusively to the pork markets.

That is what the Portland Ranch Company, at Lancaster, Los Angeles county, are doing and while the foundation has only been fairly started it is being found so profitable that the herd will be gradually increased in the next few years.

There are 800 acres of land in this ranch, 500 of which are seeded to alfalfa making it the largest alfalfa ranch in the Antelope Valley.

The present owners purchased the land about three years ago, the larger portion of it then being desert land. With the aid of pumping plants a large part of the ranch has been made into productive alfalfa fields, the hay having all been sold to the Los Angeles markets in the past.

Experiments were carried on with hogs on alfalfa and grain, for some time after purchasing the land until it was demonstrated that the alfalfa sold as pork brought more money than when sold as hay.

Since then, 125 registered Poland-China brood sows have been purchased from breeders in this State, and bred to purebred boars. From this foundation it is hoped to market 1000 head during the present year, but it is not the aim to sell any of them for breeding purposes.

ALFALFA HAY FEED.—With alfalfa as the chief feed grown aside from a small acreage of pumpkins, watermelons, etc., all of the grain must be purchased. The ration being fed at this time is composed of ground wheat and alfalfa. The hay is first cut into half-inch lengths and then run together with wheat, through a feed grinder, coming out in the form of a meal.

This is put into a large vat where it is soaked 12 hours in an alfalfa tea which gives it more nourishment. The tea solution is made by throwing sacks of chipped alfalfa into a large vat of water which after boiling becomes a strong solution of alfalfa tea as the name implies.

SANITARY SWINE QUARTERS.—The farrowing and fattening pens are arranged in long rows, each pen being 6 feet wide and 18 feet long. The back end is enclosed and roofed over for 8 feet. The feeding and watering troughs are along the front of the pens, which saves much labor.

A large concrete wallow has been built this winter which will provide a cool and sanitary place for the stock during the hot summer months.

While it will not be practicable to keep enough hogs to eat all of the hay grown, it is the aim to make the hogs the principal product of the ranch, though the owners state that they may run a dairy in connection at some future time.

Everything else is being done in the same progressive way as the hogs have been started, the whole ranch being fenced with hog tight fence and steel posts, modern buildings having been erected, and an electric plant and other conveniences installed.

It will be interesting to watch the

progress of this ranch; as if successful it will upset the old tradition that it isn't practical to raise purebred hogs for the market alone.

PURE-BRED SALES.

The following sales of purebred live stock in California have been reported to us since our last issue containing this notice.

BERKSHIRE SWINE.

A. B. Humphrey, Mayhews, sold to Hawaii Meat Co., Honolulu, two boars, Superior Duke 3rd and 4th; to E. F. Anderson, Modesto, boar Champion Star D 184370; to J. A. Burroughs, Delano, sow, Master Queen Kern 189360; to Robert McLay, Sacramento, boar, Gem's Longfellow 3rd 189362; to Cottle & Hobson, Amsterdam, Cal., boar, Gem's Master Duke 189358, and sow, Miss Ideal P. 189357; to T. H. Gorton, Elk Grove, two sows, Duke's Champion Bell 3rd 189359 and Master Duke's Bessie 189361; to S. O. Gronner, Manteca, two sows, Lady Fashion and Duke's Champion Bell 4th; to Cornwell ranch, Kahului, Maui, H. I., two sows, Invincible Fashion 2nd and 3rd; to Louis Titus, Tracy, Cal., boar Prince Superior 3rd 179727. Brae Bourne ranch, Santa Rosa, sold to E. K. Sibbald, Santa Rosa, one boar.

POLAND CHINAS.

A. M. Henry, Farmington, sold two sows to W. D. Rankins, Monteca; two bred sows to C. E. Buckley, Hopeton; boar and four sows to Harry Cross, Heber; boar to D. C. Church, Heber; boar to J. H. Cochran, Felix; boar to Staten Island Land Co., Walnut Grove; boar to George E. Shaw, Hollister; boar to J. L. Lucas, Camanche; sow to J. W. Carter, Farmington; bred sow to C. E. Batdorf, Oakdale; boar to Albert Lindley, Stockton; boar to Round Valley Land Co., Covelo; boar to William Richards, Sonora; boar and sow to J. A. Allen, Pima; boar to George Keffer, Ione; boar to J. A. Nelson, Stockton; boar to Frankenheimer Bros., Stockton; boar and sow to R. N. Flower, Copperopolis; boar to John Campbell, Escalon.

W. A. Young, Lodi, sold to E. Willet, Florin, Cal., sow; to Francis D. Buck, Ripon, Cal., boar; to Effie T. Manning, Santa Rosa, boar; to A. J. Phillips, Laton, boar and sow; to A. M. Rogers, Lodi, two sows; to Alfred Baker, Elk Grove, boar.

JERSEY CATTLE.

N. H. Locke, Lockeford, sold to C. C. Skewes, Grass Valley, bull Bonanza Fox, 112045; to E. W. Sargent, Hanford, bull Valet's Repeater of L., 115-735.

DUTCH BELTED CATTLE.

U. G. Strader, Stanislaus county, sold to J. Barnhart, Keyes, 3 cows and a bull; to Mr. Young, Turlock, a cow and calf; to Mr. Franklin, Turlock, 1 bull.

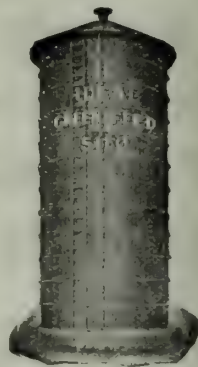
HOLSTEINS.

J. W. McAllister, secretary of the California Holstein-Friesian Association, has recently sold young bulls to A. E. Foster, Calexico; V. Delfonte, D. Paggi, and C. Lawrence, of Los Angeles.

HORSES.

W. J. Greer writes that he cannot advertise any more this season because he has just sold the last of his offerings, the jack Mogul Giant, first-prize winner at the State Fair 1913, to Ben E. Crouch, of Chico.

Silo Facts



A silo must be absolutely air-tight to produce good ensilage and should be so constructed that it will continue to be air-tight after the first filling.

Non-conductive of heat and cold.

Economical to erect and maintain.

Strong and rigid to resist weather conditions, and easy to operate.

All necessary features for the operation and maintenance of a perfect silo are incorporated in the Ideal Green Feed Silo.

Buy an Ideal Green Feed Silo now and fill it with your first cutting of alfalfa. Then plant corn to fill it again this fall, insuring yourself against burnt-out pastures this summer and the high cost of feed that will be necessary to buy next winter.

Write for catalog B for full information.

Ensilage Cutters and Alpha Gasoline Engines.

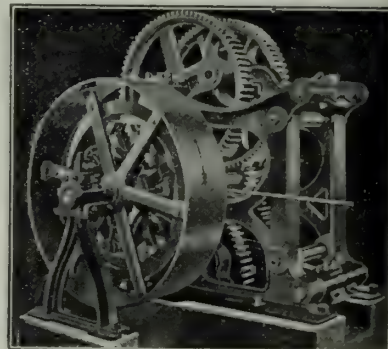
DE LAVAL DAIRY SUPPLY CO.

Drumm and Sacramento Sts.,
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PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.

If you have a DEEP WELL Problem--



COME TO
POMONA

Our deep well experts will be glad to advise with you and you will gain much by a visit to the Pomona Valley—the largest deep well irrigation district in the world.

If you can't call and see us—then write stating your problem fully, with depth of well, etc. Don't wait until you actually need the water—get in touch with us now.

POMONA M. G. CO., Pomona, Cal.

We also make a complete line of gates and valves for cement pipe irrigation. Our special valve catalogue "P" will be sent free to any address upon request.

POMONA DEEP WELL PUMPS

REGISTERED JACKS

12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

JAS. W. McCORD, Hanford, Cal.
Residence, 508 N. Douty St.
Phone 471-J.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

Corn Silage Better Than Egyptian.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

About a year ago we heard of a dairyman who stated that he could not afford to grow corn for silage as its feeding value in that form was only rated at \$2.50 a ton. Ten tons an acre could be grown which, at the above price, would mean a return of \$25 an acre, less the cost of planting, harvesting and siloing, which would run about \$2 per ton, leaving the owner about \$5 an acre for interest on high priced land.

That the value placed on a ton of silage was, in this case, far below the actual value has been demonstrated on every dairy where it has been used. Two cases in mind are those of J. L. Jamison, near Tulare, and R. E. Watson, near Modesto, and their experiences may be of value.

SILAGE SUBSTITUTED FOR HAY.—Mr. Jamison milked a herd of high-producing grade Holsteins, and was feeding 35 to 40 pounds of alfalfa hay, before the silage feeding started. Hay being scarce and high priced, its amount was cut down as fast as practicable to 10 pounds, adding 35 pounds of silage. This proportion was continued the balance of the winter.

It will be seen that the ration of silage and hay weighed somewhat more than when hay alone was being fed, which would lead one to think that a given amount of silage was not worth as much as an equal amount of hay; but it turned out that the extra five or ten pounds fed was more than paid for by a larger flow of milk, and it is Mr. Jamison's belief that his silage was worth as much for feed as his high priced alfalfa.

EGYPTIAN SILAGE NOT SO GOOD.—The experience of Mr. Watson, while somewhat different, showed about the same results. Registered Jerseys were being handled in this case, having run on wild pasture and being fed chopped alfalfa, before the silo was opened. The top half of the silo had been filled with Egyptian corn and the bottom half with Indian corn, so it was necessary to start with the Egyptian. Although the cows ate the silage they did not seem to relish it and it was with some effort that they were made to eat 20 pounds a day, in connection with chopped alfalfa hay. A slight increase in the milk flow was noticeable from this ration, but it was not considered satisfactory. When the Indian corn was reached, however, it was an entirely different story for the alfalfa ration was easily cut down to about five pounds daily and the cows would clean up 30 pounds of silage. There was also a decided increase in the milk flow, the average for the rest of the silo season being 10%, according to the weights and tests of the Stanislaus

Cow Testing Association, in which the herd was tested. In this case the value of the Indian corn silage was placed as high or higher than chopped alfalfa.

VETCH AND CORN THE SAME SEASON.—As to whether it pays to raise corn for silage, Mr. Watson secured an average yield of 10 tons to the acre. By keeping close account of the cost of raising, harvesting, and putting in the silo he found the total cost around \$2 a ton, which is very little if any more than the cost of raising, cutting, curing, and stacking hay, where the same haul has to be made. As the average yield of hay on this ranch is eight tons, it will be seen that the corn paid best, but as the corn required the use of the land only, from the early summer until harvesting time a crop of hay should be credited to the corn land also.

Most silo owners find that from one and a half to four tons of hay can be harvested per acre before the corn is planted, depending entirely upon the soil and weather conditions. Finding the corn silage so profitable, Mr. Watson is planning to silo both the hay and corn crop from 40 acres this year; and for that purpose has planted 50 pounds of vetch seed with an equal amount of beardless barley.

The idea of planting the vetch was that it would add to the feeding value of the silage as well as to the fertility of the soil, and by planting it in the barley it stands up, enabling it to be more easily harvested. Late in March this field had every prospect of yielding close to five tons to the acre. With an average corn crop to follow later in the year the average yield of silage material will be brought up to about 15 tons to the acre, which is unheard of in yields of alfalfa only.

What the value of the silage from an acre would be, in dollars and cents, by this kind of a comparison, depends entirely upon the value placed upon alfalfa, but it will be seen that the man first spoken of, had an entirely erroneous idea of the actual value of corn silage.

Others who have used silage the past winter, pronounce it the greatest feed they ever used, where some alfalfa is fed, besides being a benefit to the land through the rotation system made possible on alfalfa land.

FETERITA FOR DRY LAND.

[Written for the PACIFIC RURAL PRESS.]

Among others who have been experimenting with the new cereal feterita, is John Daggs, a swine breeder of Modesto; and like most others his experience seems to show that there is much merit to this new crop.

Last year Mr. Daggs planted a small piece of ground, to the following grains: kafir corn, milo maize, Egyptian wheat, Egyptian corn, and feterita. The growing conditions were anything but favorable as the land was poorly tilled before planting was done and lacked moisture. After seeding, no other work was done on the land until harvest time when it was found that the feterita produced about twice as large a crop to the acre as any of the others.

The idea of this seeming neglect was to see what the different varieties would do under adverse conditions; and in this respect the feterita seems to have excelled all the others, so much so in fact that Mr. Daggs has

PUT YOUR MONEY IN HOLSTEINS

PAYS BETTER THAN THE BANK.

Why raise grade calves when it costs no more to raise PUREBREDS that you can sell readily at from \$100.00 up, at six weeks of age? Then again—Holsteins have increased 25% in value in the last two years. THERE IS A REASON. To convince yourself, attend the

SECOND CONSIGNMENT SALE of the
NEW YORK STATE BREEDERS' SALE COMPANY,
SYRACUSE, N. Y., MAY 5-6, 1914.

Every animal will be sold with an absolute guarantee to be as represented. YOU TAKE NO CHANCES. There is no place in the world where you can see so much good breeding and individuality as you will see here in two days. PERSONALLY INSPECTED. TUBERCULIN TESTED.

For catalogue, address the managers,

LIVERPOOL SALE & PEDIGREE CO., Liverpool, N. Y.

GEO. A. SMITH'S

FIRST SALE OF REGISTERED HOLSTEIN CATTLE.
Corcoran, Cal.,

TUESDAY, JUNE 16, 1914.

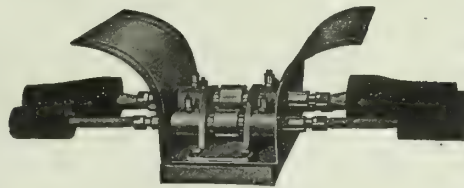
125 Head of Registered Holstein Cows, Heifers and Bulls will be sold at Bidder's Prices.

- 25 Head of Registered Holstein Cows.
- 20 Head of Bred Registered Holstein Heifers.
- 50 Head of Registered Holstein Heifers.
- 20 Head of Registered Holstein Calves.
- 10 Head of Registered Holstein Bulls.

This stock will be sold without reserve and without regard to cost or value, and includes many animals from the best breeding of the WORLD'S GREATEST MILK AND BUTTER BREED. Many were imported from Leading Eastern Herds and being such a large sale some of these animals will go at Bargain Counter Prices.

WRITE FOR CATALOG.

GEO. A. SMITH, Corcoran, Cal.



K-3 Brush Power Bottle Washer.

Bottle Washers, Bottle Fillers, Tubular Milk Coolers, Sanitary Pipe Fittings, and other kindred Dairy Machinery and Supplies. We are Wholesale and Retail Dealers.

Write for prices and literature.

GUY F. KELSEY CO.

106 E. 8th St. Los Angeles, Cal.

35 Agencies in California.

We want a reliable agent in your locality.

50 COWS AVERAGE 717 POUNDS BUTTER.

This is the average of the 50 cows that have completed yearly semi-official tests to date, in our herd, and only 15 at mature age.

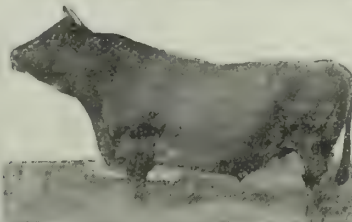
Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.



INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as \$150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention. A. W. MORRIS & SONS CORPORATION. Holstein-Friesian Cattle. Woodland, Cal.

50% The beneficial effect of the blood of a pure-bred bull of prepotency, upon his offspring out of grade cows, is more than 50%, owing to the strength of his breeding.



KING'S VALET, Grand Champion, State Fair, 1912.

The demand for good dairy cows far exceeds the supply, and the market for unproductive cows is rapidly narrowing.

50%+ of strong Jersey blood may be secured in your next crop of heifer calves by using one of our young bulls.

We have a few choice bred bull calves for sale, sired by KING'S VALET and HORELLO'S GOLDEN LADDIE.

N. H. LOCKE CO., Lockeford, Cal.

No females for sale at present.

planted 10 acres this year, a report of which he promises to send this paper at a later date.

Sonoma county gets the district fair again this year, August 31 to September 5.

RHOADES & RHOADES

EXPERT LIVE
STOCK AUCTIONEERS

Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.

1501-3-5 So. Main St., Los Angeles.

Reg. Poland China Pigs

For sale from our prize winning stock—the prolific kind. Both LARGE AND MEDIUM TYPE. Either sex. Price \$12.50 up. Guaranteed as represented or money refunded.

W. A. YOUNG, . . . Lodi, Cal.

Breeders to Promote Industry.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

In a recent issue we gave notice of the meeting held by the directors of the California Livestock Breeders Association in San Francisco, April 4; but were unable to give in full the program that has been outlined, on account of lack of space.

It has been evident for some time that this association was badly in need of such a program; for in conducting the business of so large an industry, it is impossible to make much headway unless definite aims are set forth, and for that reason D. O. Lively, who is one of the new directors, submitted a program which he considered most important and which was adopted as follows:

1. Authentic statistics of California live stock should be collected and published.

2. Live stock should be made the subject of discussion at all commercial and financial gatherings.

3. An effort should be made to increase the registration of pure blooded live stock in the herd books.

4. Every live stock breeder in the state should be urged until he becomes a member of the association.

5. Lists of breeders should be maintained and made accessible to inquirers.

6. Uniform live stock laws in the counties of the state should be urged; this applies to the sale of strays, impounding live stock, etc.

7. All community literature published by railroads and by Chambers of Commerce or commercial clubs should carry authentic information about the live stock possibilities of California.

8. Live stock as a desirable bank collateral should be made the topic of education.

9. Banks should be informed that they can promote the interest of their communities by taking notes for live stock from farmers.

10. Early, prompt, and vigorous action should be taken in the matter of securing for live stock a part of the fund that will be expended by California counties in a display of their resources at the Panama-Pacific International Exposition.

11. A paid secretary should be able not only to collect his salary from the membership, but have a fund with which to carry out the aims and objects of the association.

In the matter of hiring such a man to act as secretary, it seemed for a time impossible, as there are no funds in the treasury to start with, but Mr. Lively stated that he thought such a man could be secured, with the understanding that he was to collect his own salary and expense money.

In view of the fact that he had proposed the arrangement, Mr. Lively was given instructions to hire such a man, provided he could be found, and is, we understand, now in search of one.

This is certainly a step in the right direction; for the association has heretofore been seriously handicapped in not being able to hire a secretary who could devote his entire attention to association matters. Every breeder and farmer should lend financial support to the new secretary when he is appointed, that we may have an association capable of improving live stock conditions throughout. We

might also suggest that the future work of the association be along lines that will benefit all stock men, from the small breeder to the large range man; as there is a promising field in either direction for improvement which can only be accomplished by the co-operation of all.

SUPPLYING THE LOS ANGELES MILK TRADE.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

The two largest whole milk and sweet cream markets, in California, are San Francisco and the Bay cities, and Los Angeles.

As a natural consequence of the growth in population of these cities, the demand for dairy products has increased, many times over what it was a few years ago.

Situated as it is, San Francisco has a large section from which to draw whole milk and sweet cream. Much of the adjacent territory is dairy country, and besides that, San Francisco has good rail communication to several of the largest dairy districts of the State.

SOUTHERN DAIRY DISTRICTS.—Los Angeles also has good dairy land within a radius of 60 miles, but much of it is also good citrus fruit land, which is therefore held at prices prohibitive for dairy purposes. This condition of land valuation, has forced the price of whole milk upward to a point where \$600 and \$700 land is, in some cases, being used for dairy purposes, and with gratifying results to the owners too.

Owing to the restricted production and with the rapidly increasing population the whole milk supply for the city, is very often a long way short, and for that reason prices vary from a 50 cent per pound fat basis to 57½ cents, according to the season, but it is contracted at those prices for the entire year's output.

SWEET CREAM MAY BE SHIPPED.—The sweet cream situation is somewhat different; as with that, the dairy sections south of Fresno are able to compete and consequently the price of fat in sweet cream, is not so high. While the extra shipping charge on whole milk makes it impossible for any but the near dairies to compete.

With so much public agitation by the health boards, one would naturally suppose that the certified plant would be more popular in the south, than around San Francisco, but such does not seem to be the case.

DAIRY CONDITIONS GOOD.—Conditions in southern California at this time, seem to be exceptionally favorable for the dairy industry; and some districts that have suffered extensively through the big freeze of last year, are contemplating freeing from citrus fruits to alfalfa and the cow.

It is not likely that any of the product from nearby points, will ever be used for making butter, except the small hold-over at times; for there is every reason to suppose that the market will broaden as fast or faster than the supply.

[The recent reduction in express rates on cream and milk from the Fresno district to Los Angeles will stimulate production in that section. From Fresno they were reduced from \$1.20 per hundred to \$0.66; Selma, \$1.20 to \$0.64; Tulare, \$1.05 to \$0.58; Bakersfield, \$0.94½ to \$0.47.—EDITOR.]

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, Cal.

Breeder of

SHORT HORN CATTLE SHROPSHIRE AND MERINO SHEEP

ATTENTION, SHEEPMEN

My pure-bred, range-raised yearling Shropshire and Merino rams will be out of mountains about April 15 and ready for inspection at my place.

Shropshires sired by rams imported by me from England in 1911.

America's Leading Horse Importers

PERCHERONS



"Our recent importation arrived at our Oakland stables March 1st. This shipment comprises the best lot of stallions ever shipped to the Pacific Coast. Every horse in the lot is sound, young, stylish and of the best conformation. At the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons; two Second Prize ribbons, and other honors.

If you want the BEST let us hear from you."

McLaughlin Percheron Company
Kansas City, Mo. Oakland, California

THE HINMAN MILKING MACHINE

Is fast gaining favor. 2381 machines sold in 1913.



The machine that is remarkable for its SIMPLICITY, RELIABILITY AND REASONABLE COST.

C. W. Ginn of Corcoran is milking 75 cows. Read what he says.

Corcoran, Jan. 7, 1914.

Mr. C. F. Daniels.

Dear Sir: I consider my Hinman investment one of the best I have ever made

Yours truly,
C. W. GINN.

C. F. DANIELLS & SON, Modesto, Cal.

Agents for California and Oregon.

WAUKEEN STOCK FARM

Offers some choice Poland-China gilts, both bred and open. All full sisters to one a breeder offered me \$75 for at 12 months old. \$10 up.

CHAS. N. ODELL, Modesto, Cal.

ASK YOUR DEALER FOR

EL DORADO COCOANUT OIL CAKE

for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,

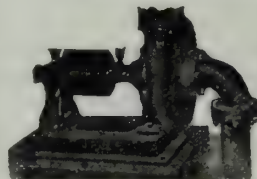
149 CALIFORNIA STREET, SAN FRANCISCO.



The Campbell Automatic Irrigation Sprinkler

Solves the "Irrigation Problem" and affords rain when you want it, and like you want it, at the minimum cost of installation and operation. Sample postpaid \$3.00. Money back if you want it. Descriptive literature on request.

J. P. CAMPBELL, Jacksonville, Fla.



PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

The creameries of Kings county paid \$120,000 for March cream and milk. Three paid enough difference for sweet cream to pay the dairymen for grad-

ing: Maple Grove, 5c premium; Central creamery, 2½c average premium; the Lakeview creamery paid 33c for sweet cream.

With the Live Stock Men.

The Live Stock Exhibit at the Panama-Pacific International Exposition at San Francisco in 1915, at which all the great cattle and stock-raising nations will display, will cover 65 acres. The exposition management has set aside \$175,000 for premiums and prizes for live stock, and \$47,000 has been raised by breeders' associations in the United States and abroad.

A woman livestock breeder was recently appointed assistant to D. O. Lively, chief of the Department of Live Stock for the Exposition. Mrs. Wm. Grant owns a large California ranch.

U. S. D. A. figures for 1913 on livestock are given below: Cattle, horses, sheep and swine in U. S., \$3,650,000,000; in California, \$77,584,300, or over 1/50. Dairy products in U. S., \$814,000,000; in California, \$34,950,552, or nearly 1/25. Eggs and fowls in U. S., \$578,000,000; in California, \$18,205,896, or nearly 1/30. And yet, with all the plans which have been laid for the exhibition of the resources of California before the world's millions, with all the money which has been and is being expended in the State for this purpose, there is not one cent being expended or even available for an exhibition of California live stock, according to a note received from the Panama-Pacific International Exposition.

Tillamook, Oregon, dairymen have recently formed three new associations, the Tillamook Cow-Testing Association reorganizing with 780 cows under test, the Cloverdale Cow-Testing Association with 542 cows signed up, and the Tillamook County Holstein Breeders Association. Our own university will gladly help to form such organizations in California.

Fresno county paid 28c, totaling \$70,000 for March. This is about 5c per pound lower than February.

A Utah company has an option on land at Gridley for a condensed milk factory.

Malcolm H. Gardner, Superintendent of Advanced Registry of the Holstein Association, announces that the fiscal year ends April 30, and all entries for the 25th volume of the Advanced Register must be mailed on or before that date.

It is estimated that about 300 cans of cream are being shipped daily from Newman. Feed in that district is plentiful this year, and some of the dairymen are taking advantage of the wild feed in the mountains.

W. C. Tighe and G. E. Ripperdan, of Madera, recently purchased a carload of grade Holstein cattle in Kings and Tulare counties. It is thought that the formation of a co-operative creamery at that place will cause a big demand for dairy cattle during the next few months.

Buyers have been in the Wheatland fields offering 18 cents a pound for wool. This is said to be the highest price offered for wool in that section for several years.

Elko, Nevada, reports the sheep clip very good, both in weight and quality. The Adams-McGill Co., of Elko, has 16 shearing machines operated by a 9-hp. gas-engine, shearing 1600 head per day. This company has been grading up its flocks for some years.

The new Terra Bella stockyards shipped a bunch of 134 cattle last week to Sacramento.

H. A. Sicles, of Tulare county, re-

cently shipped 60 steers averaging 1442 pounds, selling for about \$100 each.

The El Dorado Meat Company of Stockton recently paid Oregon cattle raisers \$15,000 for 208 head of beef cattle.

W. A. Ward, of San Mateo county, is now in England buying Shire horses, some of which will be shown at the Panama-Pacific Exposition.

A committee of the Colusa County Swine Breeders' Association met State Veterinarian Keene in Colusa, March 31, at which time by-laws and a constitution were drafted, as well as a code of ethics.

Canadian live stock was shipped so strenuously to the United States after the tariff was removed last October that prices there have gone up to as much as they could get in the United States. Winnipeg alone shipped \$752,000 worth in 1913, which is more than ten times the 1912 shipments.

W. S. MacWilliams, who has been fitting the show stock of the King of England for some years, has been appointed as judge of the fat stock championship classes of the International Livestock Exhibition to be held in Chicago next November.

The April crop report of the Department of Agriculture shows that the losses of live stock in Nevada were very small during the past winter and that their condition at this time is all that could be asked for.

Cattle men in the vicinity of Ducor, Tulare county, state that cattle in the mountains adjacent to that town are in splendid condition and will be ready to move by the first of May. New cattle corrals are being built at Ducor to accommodate shippers.

LESSENERD MILK FLOW.

To the Editor: I have a fine Jersey cow which was fresh about two months ago, and gave at that time a good three gallons to the milking. About a week ago she started to give less until now she gives about a gallon and a half. She has a good appetite and gets the same amount of feed as before: a bucket of coconut meal, mixed with alfalfa and bran every evening and also plenty of clover grass. She has hay in the morning. Can you advise me as to what is the matter.—A. J. Soquel.

[About the only thing we see from your description is that your cow is an ungrateful wretch and anything but a persistent milker. Many cows have the habit of giving a large flow of milk for a time after freshening but fall down badly in a short time and your cow shows strong evidences of being that kind, if she is physically all right.—EDITOR.]

MEDIUM OR LARGE TYPE POLANDS.

To the Editor: Can you tell me whether there are breeds of hogs known as small boned Berkshire or Poland-China and if so where they may be obtained.—J. C., Elk Grove.

[The hog you are thinking of is probably the medium or small type Poland-China. These are called medium type as there are two distinct types of Poland, the large type and the medium. The first named are

much larger than the latter and are having a wave of popularity at this time in this State. If you wish to purchase breeding stock you should correspond with our advertisers who will, we feel sure, be glad to tell you the merits of their stock.—J. C. L.]

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2¼c per word.

SWINE.

REGISTERED BERKSHIRE BOARS FOR SALE—Excellent individuals of the best breeding; good feet and plenty of bone; ready for use; farmers' prices; mail orders guaranteed satisfactory. A. H. Brinton, Woodland.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

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DUROCS from first-prize winners State Fair, \$15.00 up. Ed E. Johnson, Turlock, Cal.

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POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

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REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823-Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

YUBA DAIRY CO.—Fine herd of Holstein and Durham cows for sale; 75 head of heavy milkers, all in good condition. Write to Marysville, Cal. for further information.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

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THE MCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

FOR SALE—A pure-bred Holstein bull calf, five months old, evenly marked; from an eight gallon cow; price \$50. A. Buschke, Tracy, Cal.

THREE REGISTERED HOLSTEIN YEARLING HEIFERS for sale, from good A. R. O. dams. K. W. Abbott, Milpitas, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

FOR SALE—50 very high-bred grade Holstein heifers, from 18 to 24 months old; all bred to purebred sires. E. J. WELDON, Box 962, Sacramento.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

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TWO REGISTERED HOLSTEIN YEARLING HEIFERS for sale, from good A. R. O. dams. K. W. Abbott, Milpitas, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

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REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

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N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

9 BULLS 9

REGISTERED SHORTHORNS

9 to 13 months old. In fine condition.

H. L. MURPHY

Perkins, California

Feed for Laying Hens.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

Last week our space was used up before we go through with "feeding the layers," so this is in continuation.

RATIONS FOR LAYERS.—There are probably as many systems or methods of feeding as there are poultrymen, for everybody has a way of their own, and for those that are having good success there is no use in changing.

WITHOUT MASH.—As the average farmer is away from the by-products of the mill, he generally makes up a feed without mash, and he can get good results, too, by balancing them right. A good ration for this way of feeding is to give two parts wheat, one of cracked corn or kaffir corn, one part of good oats. If there is milk on the farm and the hens can have all they can drink, it will furnish all the animal protein necessary for a good supply of eggs. This with a good supply of green feed will make a balanced ration for layers and breeders.

COMBINATION GRAINS AND MASH.—The dry mash appeals to so many poultrymen that it has without doubt come to stay. It saves labor and the poultryman knows that his chickens are better satisfied when fed a dry mash

as well as grain. Its disadvantages are that it may be made too rich, thus stimulating the hens too much, especially the breeders. A good dry mash can be made of two parts wheat bran, one part wheat middlings, one part ground barley, one part ground oats, and one part ground corn, one-half quart of beef scrap.

If this is fed to any of the heavy breeds, leave out the cornmeal and add one part ground alfalfa meal. Moreover, when mash is fed to the large breeds it should be fed just so much every day, not left before them all the time as with the small breeds.

With the mash there must be some if not all the grains mentioned in the first ration fed twice a day and with all a proper supply of green feed. Fresh water, grit, oyster shell (the ground eastern is the most economical at all times), and at times a little charcoal, sulphur, etc., should be given in a small quantity of moist mash.

Hatchery and Brooding Notes.

This is the best month in the year for hatching Leghorns, Anconas, Campines, etc. In fact, any hatched earlier than last month are sure to molt in the winter some time. So it is a saving of time and trouble to wait for March and April, but get out all you can this month. This is promising to be a good month for all kinds of hatching, Orpingtons, Rocks, and Wyandottes, not to speak of Reds, are being hatched in great numbers. Looks like everybody and his aunt were going into the poultry business to furnish the Eastern guests with "fresh laid" for breakfast—well the more the merrier I say. April and even May pullets are ready to lay in the fall if well raised.

FIGHT THE LICE NOW.—With lice on sitting hens and in fact all of the hens, like flies, one killed now saves a thousand later. I see by several poultry papers that some Eastern firm is advertising to rid your fowls of lice by one treatment. Don't believe it, poultry lice are like bad pennies; they come back and nothing but diligence will keep them away.

A short time ago I read of a German mixture called Carbolineum Avenarius, and it was given such high credit that I paid a dollar for two quarts of it just to try it out. Now I see in a poultry journal one man has been using it and all his hens are dead, simply overusing a good thing. I went at it slow, not being acquainted with it, still I could tell by the odor it was a coal tar product, and it does not pay to be too liberal in the use of these things; better go slow and be safe. But whatever you use, go over the houses before the real hot weather comes on and look after the hens first thing.

CLEAN OUT THE INCUBATOR.—After each hatch, wash or spray the incubator with creolin solution or some other reliable germicide, and throw all doors and ventilators open for at least 24 hours after the chicks have been removed. While some people may get fairly good hatches without this precaution, it is always better to be on the safe side, for chicks hatched in a filthy incubator are very likely to succumb later to the first trouble that attacks them.

SPADE UP THE YARD.—If you have some early chicks in a run that you want for others later, be very sure

that you spade up the ground well and sow a few oats or barley to absorb the droppings. Spray the house, box, or whatever they may have been

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

IN SPITE OF ADVERTISING "BABY chicks all sold" we have received many inquiries for chicks and have now installed another incubator room, which brings our total hatching capacity to over 5,000 eggs at one time. To introduce our stock in as many localities as possible, we have made the following special prices for the balance of the season. White Leghorns—Eggs \$1.50 per 15, \$2.50 per 30, \$6.00 per 100, \$50.00 per 1000; chicks \$7.00 per 50, \$13.00 per 100, \$125.00 per 1000. Cockerels, \$2.50 each; no females for sale. White Plymouth Rocks—Eggs \$2.00 per 15, \$4.00 per 30, \$8.00 per 100. Chicks, \$11.00 per 50, \$20.00 per 100. Cockerels \$3.00 each, pullets \$2.50. Address Dept. 2, Newton Poultry Farm, Los Gatos, Cal.

ORDERS TAKEN for day-old chicks and eggs for hatching from the following breeds: White Leghorns, Buff Orpingtons, White Wyandottes, Rhode Island Reds, Black Minorcas, Barred Plymouth Rocks and Light Brahmas. All good laying stock. Eggs \$1.50 per 15. White Leghorn day-old chicks \$10 per hundred, and all other breeds \$15 per hundred. For further information address Mrs. I H Tuttle, Box 473, Watsonville, Cal.

BABY CHICKS—34,000 hatching capacity; orders taken now for White Leghorns, Black Minorcas, Rhode Island Reds, to be shipped from 16th to 18th of April and 19th to 25th of April. All choice quality. Stock can not be excelled. Western Hatchery, Petaluma, Cal. References, Petaluma Nat'l Bank

S. C. WHITE LEGHORN BABY CHICKS, hatched exclusively from my own pure-bred stock of S. C. White Leghorns, carefully selected for laying and Standard qualities; \$9.00 per 100, \$85.00 per 1000. Correspondence solicited. J. R. Heinrich Poultry Yards, Arroyo Grande San Luis Obispo County, Cal.

OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for April and May, \$9; reduction in quantities. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

S. C. WHITE LEGHORNS—Baby chicks and eggs for hatching, from vigorous, healthy, free range, selected hens, bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BHN, Santa Clara Valley Hatchery, San Jose, Cal.

MURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

FREE—66-page catalogue, describes in detail prices, etc., on 13 kinds of baby chicks, hatching eggs, incubators, brooders, etc. We ship everywhere. The Pioneer Hatchery Co., 112 E. 8th St., Los Angeles, Cal.

EGGS FOR HATCHING—Pure-bred stock; Buff Orpington, Toulouse geese, Pekin duck, Buff Cochins bantams, Pearl guineas and pheasants. L. R. McCoy, R. F. D. No. 1, Box 205, Stockton.

BABY CHICKS AND HATCHING EGGS—Beautiful White Orpingtons; also the popular new breed, Buff Minorcas. All thoroughbred, Hoganized stock. Mrs. C. A. Sanford, Mountain View, Cal.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

INCUBATOR CHICKS—White Rock, Black Minorca, White, Brown and Buff Leghorns. All high-class stock. Send for booklet of prices. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

FOR SALE—B. P. R. eggs from prize strain. Extra large, fine layers; \$1.50 per 15, \$7.50 per 100. Miss F. W. Buckley, R. D. Box 71, West Berkeley, Cal.

ORDER MAMMOTH BRONZE TURKEY eggs from largest turkey ranch in Stanislaus county; \$3 per setting. Address Crows Landing Turkey Ranch, Box 227, Crows Landing.

PURE-BRED WHITE ROCKS and White Leghorns. Fancy and utility. Stock, eggs and chicks for sale. Pleasant View Farm, Pleasanton, Cal.

ORPINGTON BRED IN ATTENTION. After April first I will sell eggs from all yards at \$2.50 a setting, both Buff and White. Mrs. S. Swaysgood, R. 2, Pomona, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

EGGS FOR HATCHING—Pure-bred White Rocks, \$1 per setting; \$6 per 100; until September 1. Mrs. J. B. Tupper, Ceres.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

CHINESE AND SILVER PHEASANT and Pearl Guinea eggs. E. W. Leffler, R. 1, Box 193, Stockton, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties. L. W. Clark, Petaluma.

PETALUMA BROODER STOVE, Haywards, Cal. Best on market. Latest improvements. Catalogue free.

BARRED ROCKS ONLY—Eggs from high-grade stock, \$2 per 15 up. G. L. Hawley, Madera, Cal.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

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WE GUARANTEE

- 1—Better egg results than from any brand of "beef scraps."
- 2—Positively no fish flavor in eggs or meat of birds fed on it.
- 3—None of the digestive troubles that many "beef scraps" cause.
- 4—Lower mortality among hens fed to force a high egg production.
- 5—Baby chicks thrive on it; they don't die, as they often do on "beef scraps."

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Free Book

giving a full account of hatching, raising, and caring for chickens,

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Will be sent to you on application

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LED ALL THE WAY

At the Napa Egg Laying Contest our pen finished second, 66 pens competing. In our own class, White Leghorns, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

BLOM & SON, Napa, Cal.



Chicks from a S. C. white leghorn strain we have been working up for 20 years. Write today (a postal card will do) for our special low prices for the next three months.

S. C. WHITE LEGHORNS BABY CHICKS

Write today and get chicks for winter laying and excellent profits
THE BHN HATCHERY Largest in the World. Capacity 165,000 Chicks **PETALUMA, CAL.**

Don't send to Chicago, or Seattle—Send here. Our prices are just as low—Our quality just as good

Mention Pacific Rural Press

POULTRY SUPPLY CATALOGUE JUST ISSUED

Grocery Supply Catalogue for April and May. A postal card brings them. Our spring General Catalogue will be off the press April 15th. File your request for it NOW.

Pacific Coast Mail Order House

229-231 South Los Angeles St., Los Angeles, Cal.

sleeping in; and give the second batch as square a deal as the first.

One great reason so many fail to raise good chicks from late hatching is that they put the chicks on the same ground that the others have been on and from which every bit of sweetness has been taken and all the foulness left; then of course the chicks do not do well and the late season is blamed. What a good old world this would be if all of us were only honest with ourselves and put the blame where it belongs.

PLANT GREEN FEED NOW.—Don't forget to plant all the green feed you possibly can this month, for it means health for the hens and wealth for their owner. We have alfalfa, broad-

leaved kale, Essex rape, and curly kale planted because I am hatching a goodly number of chicks and want something fresh when each gives out. This is really the best month for rape, as it comes up almost as soon as planted and will grow rapidly.

Scaly Legs Infectious.

"Some of my older chickens have swollen feet and large rough scales on the legs; what shall I do for them?" —J. W. J."

Your chickens have scaly leg. This is caused by a small insect that bores into the skin, raising the scales and in time causing both legs and feet to swell. The disease is infectious, but does not work very quickly. Still every individual fowl will have to be treated or your work will not rid the flock of the pest. Clean up all droppings and disinfect the poultry house and ground. Wash the legs and feet of each fowl in good warm soap-suds, using a small scrub brush for the purpose and soaking the feet well. Make an ointment of one-half lard, one-half coal oil, and as much flowers of sulphur as the oil and grease will take to make it stiff; then apply well to legs and feet of every fowl in the flock. Quite a job, especially as it may have to be repeated two or three times; but there is no other way to rid the fowls of this unsightly trouble except cutting their heads off and making pot pie of the carcass.

Troubles from Overcrowding.

Overcrowding is the father of a peck of troubles—more numerous than we ever know, because it is hard to trace all of them to this one common cause. Overcrowding the heavy breeds causes overfat hens, and overfat hens lay soft-shelled eggs that are unsalable and unusable except for some things. Besides it teaches hens bad habits, such as feather eating and idleness; it causes leg weakness, and if overcrowded on the perch the hens sweat and are liable to contract lung troubles and other internal disease, so it pays to avoid overcrowding.

More Co-operation.

"The poultry and egg producers of Salt Lake county, Utah, to the number of 100 have formed an organization to be known as the Murray Egg and Poultry Co-operative Association, the purpose of which is to do away with the middlemen and sell direct to the consumer. An office and sales department will be established in Salt Lake City. Each member will be required to stamp his eggs as a guarantee that they are fresh. Leroy Terpin, of West Jordan, is president of the association."

Nervy Poultrymen.

"An enterprising American poultryman has had the nerve to establish a poultry farm on a big scale at Hanley's Hot Springs, Alaska. He has 2,000 White Leghorns and his houses are heated with hot water from the natural hot springs. Eggs bring a big price in Alaska, and the venturesome poultryman is reaping a big harvest."

And it is safe to say if the "hot springs are public property the venturesome poultryman will not have a monopoly long on the crop of hen fruit; fact is, I don't see that this particular poultryman is so very venturesome if he is anywhere in reach of feed.

Some few years ago, I raised 600 White Leghorn pullets for a man up in Nevada who took the cake for be-

Unseen Forces Behind Your Telephone

THE telephone instrument is a common sight, but it affords no idea of the magnitude of the mechanical equipment by which it is made effective.

To give you some conception of the great number of persons and the enormous quantity of materials required to maintain an always-efficient service, various comparisons are here presented.

The cost of these materials unassembled is only 45% of the cost of constructing the telephone plant.



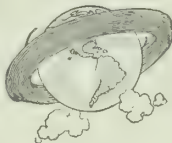
Poles

enough to build a stockade around California—12,480,000 of them, worth in the lumber yard about \$40,000,000.



Telephones

enough to string around Lake Erie—8,000,000 of them, 5,000,000 Bell-owned, which, with equipment, cost at the factory \$45,000,000.



Wire

to coil around the earth 621 times—15,460,000 miles of it, worth about \$100,000,000, including 260,000 tons of copper, worth \$88,000,000.



Switchboards

in a line would extend thirty-six miles—55,000 of them, which cost, unassembled, \$90,000,000.



Lead and Tin

to load 6,600 coal cars—being 659,960,000 pounds, worth more than \$37,000,000.



Buildings

sufficient to house a city of 150,000—more than a thousand buildings, which, unfurnished, and without land, cost \$44,000,000.



Conduits

to go five times through the earth from pole to pole—225,778,000 feet, worth in the warehouse \$9,000,000.



People

equal in numbers to the entire population of Wyoming—150,000 Bell System employees, not including those of connecting companies.

The poles are set all over this country, and strung with wires and cables; the conduits are buried under the great cities; the telephones are installed in separate homes and offices; the switchboards housed, connected and supplemented with other machinery, and the whole Bell System kept in running order so that each subscriber may talk at any time, anywhere.



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The following extract from a testimonial speaks louder than a hundred arguments:

"In reply to your favor of October 12th, regarding our tests of the Vermorel Torpille Sulphur Machine, I will say that it has given us very good results. We have been able by means of this machine to sulphur the vines in the most satisfactory manner with a much smaller amount of sulphur than with any other machine we have tested.

(Signed) FRED T. BIOLETTI,
Professor, University of California, Berkeley.

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You save time and money by using "Bishopric Wall Board" on walls and ceiling. Far better than plaster or wood walls. Stays strong and rigid. Is damp and vermin proof.

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MARTINEZ, CAL.

The Home Circle.

Eat More Raisins.

Raisin Day, April 30, will soon be at hand. Every California housewife should do her part in preparing food for her family, on that day at least, that will contain the sugared grape. Raisins are a food of the highest quality, more nourishing than meat and as healthful. The sugar of the grape is superior to all other kinds and is required by the system in moderate quantities. Here are a few recipes that may help our lady readers in their preparations to celebrate raisin day:

PRIZE RAISIN BREAD.—Soak one yeast cake in one and one-half cups of potato water; mix in enough flour to make a stiff batter; beat five minutes. Let stand over night. In the morning scald two cups of sweet milk, into which put one rounded tablespoonful cottolene, one tablespoonful of salt, three tablespoonfuls of sugar. When milk is lukewarm, mix with the yeast; add enough flour to make a stiff batter; beat about ten minutes; let rise. When sufficiently raised, add two cups seeded or seedless raisins; mix; add more flour and knead until dough is smooth; let rise. Make into loaves and bake one hour. When baked, wet top of loaves with sugar and hot water to prevent crust becoming hard.

RAISIN BRAN BREAD.—One cup sour milk, 1 teaspoon soda, 1 teaspoon salt, ½ cup black molasses, 1 cup whole-wheat flour, 2 cups Ralston's bran, ½ cup raisins, ½ cup chopped English walnuts. Bake in a slow oven an hour.

PRIZE RAISIN BUNS.—One and one-half quarts flour, one cup yeast, one-half cup sugar, one egg, half cup butter, pinch of salt, a little grated nutmeg, mix into thick pancake batter with sweet milk which has been scalded and cooled to blood heat. Let stand in a warm place, well covered, till very light, usually takes from three to five hours, then add flour enough to make a good biscuit dough and add two or three cups California seeded or seedless raisins, washed and dried. Mix well and let rise again till light. Roll out like biscuits, cut with biscuit cutter and put into greased pans to rise.

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GROCERIES

For LESS MONEY

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FOR
OUR
PRICE
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HOME UNION

51 MARKET STREET SAN JOSE, CAL.

When light, brush with a little sweet cream and sugar and cinnamon and bake in hot oven 15 minutes. Better than cake or pie for children.

RAISIN PIE.—One cup seeded raisins chopped fine, half cup sugar, one egg well beaten and one tablespoon flour. Pour half a cup hot water over the raisins, mix with other ingredients and cook over the fire just a little. Fill the pie, using two crusts, and bake.

MOCK MINCE PIE.—Two cups Sultana raisins (one pound), one-quarter cup vinegar (good), three-quarters cup of boiling water, one cup sugar, one-quarter teaspoon cloves, one-half teaspoon cinnamon, one-quarter teaspoon allspice or nutmeg; little salt; chop or grind raisins, add three-quarters cup boiling water and cook 10 minutes. Mix the vinegar, boiling water, sugar, salt, spices and boil until it becomes a syrup (8 or 10 minutes). Combine the syrup and raisins and let cool slightly. Make a rich pie crust.

RAISIN SANDWICH.—Chop one cup California raisins and one cup walnuts very fine; add three tablespoons mayonnaise and one teaspoon lemon juice. Mix into paste, spread on thinly buttered bread. Nice luncheon sandwich.

STUFFED RAISINS.—Blanche almonds. Select large Muscat raisins and take out seeds. Split raisins slightly and insert almonds and draw skin around to cover opening.

SWEET PLUM PUDDING.—One cup suet chopped fine, 1 cup molasses, 1 cup milk (sour preferred), 1 cup raisins and one pound figs chopped fine, 3½ cups flour, 2 eggs, 1 teaspoon cloves, 2 teaspoons cinnamon, 1 grated nutmeg, a little salt, 1 teaspoon soda dissolved in a little warm water. Fill mold two-thirds full and steam 3 hours.

BREAD PUDDING.—Make custard of 1 quart milk, 3 eggs and 4 tablespoons sugar; add bread in small pieces and 1 cup raisins. Flavor with vanilla and nutmeg and bake.

RICE PUDDING.—Boil rice until tender. One quart milk, 3 eggs beaten light, 4 tablespoons sugar, 1 teaspoon vanilla, 1½ cups cooked rice, 1 cup seeded raisins. Put in dish, grate nutmeg over top and bake until brown.

APPLE AND RAISIN JAM.—Twelve large apples, 4 pounds of seeded raisins, 1 pint of sweet cider, 1 pound of sugar. Wash the apples and cut them into eighths. Place in a preserving kettle over a gentle heat with the cider, and cook until tender. Press through a sieve so as to keep back the skins, seeds and cores of the apples. Return to the preserving kettle, add the raisins and the sugar and simmer for half an hour. Turn into glasses and seal as usual.

RAISINS WITH NUTS.—Scientific analysis shows that raisins eaten with nuts constitute a perfect health food, supplying every element that is required for nourishing the system, enriching the blood and invigorating the digestive organs.

Ethel—Mamma, what makes the lady dress all in black? Mamma—Because she's a sister of charity, dear. Ethel—Is charity dead, then?—Princeton Tiger.

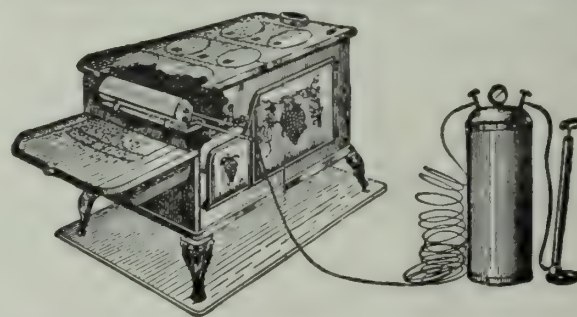
One exceedingly warm day in July a neighbor met an old man and remarked that it was very hot. "Yes," said Joe, "if it wasn't for one thing I

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should say we were goin' to have a friend. "There nothing froze," said thaw." "What is that?" Inquired the Joe.—Tit-Bits.

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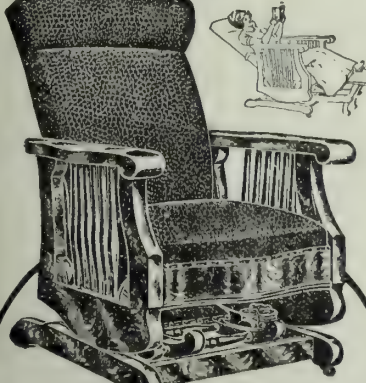
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Our Young Folks

An Elephant Story.

"I was a full-fledged M. D. once, and never should have thought of adopting my present profession if it hadn't been for a queer accident when I first hung out my shingle.

"I had a rich neighbor, a man I was bound to propitiate; and the very first call I had, after days of waiting for patients who didn't come, was to his barn, to see what was the matter with his sick mare. I cured the mare, and took in my shingle; for from that day to this I've never prescribed for a human being. I had won a reputation as a veterinary surgeon, and had to stick to it. But that's neither here nor there. Only, if you think animals can't show gratitude and affection, perhaps you'll change your mind.

"When I'd been in business a year or two, I sent for my brother Dick. He was a wonderful chap with all kinds of animals; and I thought perhaps I could work out of my part of it, and leave that for him. I never did; for Dick's a cotton-broker in New York now, and I should have to begin all over again to make a first-rate physician. But that's what I meant to be then.

"The very next day after Dick came I got a telegram from P. T. Barnum. I'd been down there once or twice to his own stables, and he had a good deal of faith in me. The dispatch was:

"'Hebe has hurt her foot. Come at once!'

"Hebe was the favorite elephant—a splendid creature, and worth a small fortune."

"I've seen her," broke in one of the drummers; "and a beauty she was, too."

There was a murmur of agreement from the men, and the story-teller went on.

"Well, I confess I hesitated. I distrusted my own ability, and dreaded the result. But Dick was determined to go, and go we did. When we got out of the cars, Barnum himself was there, with a splendid pair of matched grays. He eyed me very dubiously. 'I'd forgotten you were such a little fellow,' he said in a discouraged tone. 'I'm afraid you can't help her.' His distrust put me on my mettle.

"'Mr. Barnum,' said I, getting into the carriage, 'if it comes to a hand-to-hand fight between Hebe and me, I don't believe an extra foot or two of height would help me any.'

"He laughed outright, and began telling me how the elephant was hurt. She had stepped on a nail or bit of iron, and it had penetrated the tender part of her foot. She was in intense agony, and almost wild with the pain.

"Long before we reached the enclosure in which she was we could hear her piteous trumpeting; and when we entered, we found her on three legs, swinging the hurt foot slowly backward and forward, and uttering long cries of anguish. Such dumb misery in her looks—poor thing!

"Even Dick quailed now. 'You can never get near her,' he whispered. 'She'll kill you, sure.'

"Her keeper divined what he said. 'Don't you be afraid, sir,' he called out to me. 'Hebe's got sense.'

"I took my box of instruments from Mr. Barnum.

"'I like your pluck, my boy,' he said



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heartily; but I own that I felt rather queer and shaky as I went up to the huge beast.

"The men employed about the show came around us curiously, but at a respectful and eminently safe distance, as I bent down to examine the foot.

"While I was doing so, as gently as I could, I felt, to my horror, a light touch on my hair. It was as light as a woman's; but, as I turned and saw the great trunk behind me, it had an awful suggestiveness.

"'She's only curling your hair,' sang out the keeper. 'Don't mind her.'

"'I shall have to cut, and cut deep,' said I, by way of reply. He said a few words in some lingo which were evidently intended for the elephant's understanding only. Then he shouted with the utmost coolness, 'Cut away!'

"The man's faith inspired me. There he stood, absolutely unprotected, directly in front of the great creature, and quietly jabbered away to her, as if this were an everyday occurrence.

"Well, I made one gash with the knife. I felt the grasp on my hair tighten perceptibly, yet not ungently. Cold drops of perspiration stood out all over me.

"'Shall I cut again?' I managed to call out.

"'Cut away!' came again the encouraging response.

"This stroke did the work; the absciss was lanced. We sprayed out the foot, packed it with oakum, and bound it up. The relief must have been immediate; for the grasp on my hair relaxed, the elephant drew a long, almost human sigh, and—well, I don't know what happened next, for I fainted dead away. Dick must have finished the business, and picked up me and my tools; I was as limp as a rag. Don't tell it of me, boys!"

The men were silent for a minute or two. "Did she get well?" one of them asked at length.

"Oh, yes! I forgot the sequel. That's where the moral of the whole story comes in.

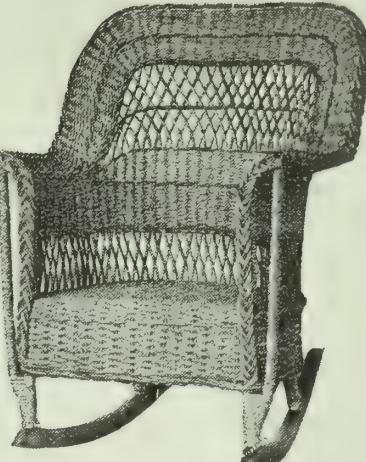
"It must have been a year and a half after this happened that I was called to western Massachusetts to see some fancy horses. Barnum's circus happened to be there. You may be sure that I called to inquire for my distinguished patient.

"'Hebe's well and hearty, sir,' the keeper answered me. 'Come in and see her; she'll be glad to see you.'

"'Nonsense!' said I, though I confess I had a keen curiosity to see if she would know me as I stepped into the tent.

"There she stood, the beauty, as well as ever. For a moment she looked at me indifferently, then steadily and with interest. She next reached out her trunk, and laid it caressingly first on my shoulder and then on my hair—how vividly her touch brought back to my mind the cold shivers I endured at my introduction to her—and then she slowly lifted up her foot, now whole and healthy, and showed it to

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me. That's the sober truth, boys!"—Youth's Companion.

THE MARKETS

San Francisco, April 22, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Although there have been no changes in the quotations on the local market, the situation is believed to be stronger than it has been. Quotations at Chicago are higher, and this has had a stiffening effect on the Coast trade. The crop outlook in California and in the north continues good, and the late rains have made the prospect for a good yield still better.

California Club, cti. \$1.62½ @ 1.65
Forty-fold 1.65 @ 1.70
Northern Club 1.62½ @ 1.65
Northern Bluestem 1.75 @ 1.77½
Northern Red 1.62½ @ 1.70

BARLEY.

Very little business in spot barley is now being done for local account, though arrivals from Port Costa for export have been in evidence. Prices for choice feed have been marked down 5c for the top figure, and common feed is now practically out of the market. There is a lot of speculative interest in the growing crop, with prices dropping lower from day to day as the certainty of a large and good crop becomes more and more assured.

Brewing and Shipping.. Nominal
Choice Feed, per cti. \$1.02½ @ 1.05
Common Feed .. Nominal

OATS.

The demand for oats is so light at the present time that, even in the face of very scant supplies, there has been a drop in the price of red feed. White continues as before.

Red Feed \$1.30 @ 1.40
Gray Nominal
White 1.25 @ 1.30
Black Seed Nominal

CORN.

The corn market has shown a little more activity this week. There is some improvement in the demand for Eastern yellow, both spot and to arrive, but quotations continue about as before. Egyptian corn and Milo maize continue at the recent advance.

California Yellow Nominal
Eastern Yellow \$1.77½ @ 1.82½
Eastern White Nominal
Egyptian 1.85 @ 1.90
Milo Maize 1.80 @ 1.85

RYE.

The movement of rye continues very light, and holders still quote prices at the same figure as for some weeks.

Rye, per cti. \$1.45 @ 1.50

BEANS.

The turn in the bean market came this week, considerably earlier than had been generally expected. Drops are reported in all the most active lines. Arrivals have been fairly large, owing to the growing assurance as to the growing crops. The expected advance in lima beans did not materialize, but instead there was a drop of 25c. It is said that there are still about 15,000 bags of limas in the hands of the growers.

(On wharf.)

Bayos, per cti. \$6.20 @ 6.50
Blackeyes 6.00 @ 6.25
Cranberry Beans 4.50 @ 5.00
Horse Beans 2.15 @ 2.25
Small Whites 5.25 @ 5.40
Large Whites 3.75 @ 3.90
Limas 6.50 @ 6.75
Pea 4.25 @ 4.50
Pink 3.75 @ 3.90
Red Kidneys 6.25 @ 6.50
Mexican Red 6.00 @ 6.25

SEEDS.

It is the old story in the seed market; no change in quotations, no activity in any line, and no prospect of any large business for some time.

Alfalfa 12½ @ 15 c
Broomcorn seed, per ton.. Nominal
Brown Mustard, per lb. 3½c
Canary 7 @ 7½c
Hemp 2½ @ 3 c
Millet 2½ @ 2½c
Timothy 7½ @ 8 c
Yellow Mustard Nominal

FLOUR.

The flour situation is unchanged,

with no talk of any immediate advance, notwithstanding the firmer tone in wheat.

Cal. Family Extras ... \$5.80 @ 6.20
Bakers' Extras 4.80 @ 5.40
Superfine 3.90 @ 4.20

Hay and Feedstuffs.

HAY.

The market is rather dull and inactive, and it is claimed that heavy concessions are occasionally made to effect sales, this being particularly the case with medium and lower grades of hay. Strictly fancy hay is cleaning up well, owing to a very light supply. Reports from the country show that the harvesting of first cutting alfalfa and of volunteer oat hay is already in progress, with indications of a heavy yield of both. Hay dealers report considerable quantities of good old hay still in the hands of the trade here.

Fancy Wheat, light bales. \$15.50 @ 16.50
No. 1 Wheat, or Wheat and Oats 13.00 @ 14.00
do No. 2 11.00 @ 13.00
Lower grades 9.50 @ 11.00
Tame Oats 12.00 @ 13.00
Wild Oats 9.00 @ 11.50
Alfalfa 8.50 @ 10.50
Stock Hay 7.00 @ 9.00
Straw, per bale 65 @ 95c

FEEDSTUFFS.

The abundance of green feed and the dropping price of barley are both having their effect on the price of feeds; and several lines are lower this week. The whole list is dull with lower prices in prospect for the near future.

Alfalfa Meal, per ton. \$18.00 @ 19.00
Bran, per ton 24.50 @ 25.50
Oatmeal 34.00 @ 35.00
Cocoanut Cake or Meal. 26.00 @ 27.00
Cracked Corn 41.00 @ 42.00
Middlings 32.00 @ 34.00
Rolled Barley 23.00 @ 24.00
Rolled Oats 28.00 @ 29.00
Shorts 26.00 @ 27.00

Garden Truck.

VEGETABLES.

The market for garden truck shows less change than might be expected at this season. Most lines are fairly firm at the old quotations. There are a few drops and one or two advances to be noted. Green peas are now quoted by the sack, and hothouse cucumbers are a regular item in the trade. There has been a further drop in asparagus.

Cabbage, per cti. \$1.00 @ 1.25
Cauliflower, dozen 40 @ 70c
Green Peppers, lb. 7 @ 8c
Carrots, per sack 35 @ 50c
Green Peas, sack 1.00 @ 2.00
Tomatoes, Mexican, box. 1.75 @ 2.25
Beans: Wax 6 @ 8c
String 9 @ 12½
Sprouts, lb. 4 @ 6c
Celery, large, crate 1.50 @ 2.25
Rhubarb, box 50c @ 1.25
Lettuce, crate 60 @ 90c
Mushrooms, hothouse, lb. 30 @ 50c
Asparagus, box 75c @ 1.50
Cucumbers, box 2.00 @ 2.50

POTATOES AND ONIONS.

Except that the larger arrivals of new potatoes have caused a lower figure to be named for this line, there is no change in potatoes. A good deal of choice Oregon stock is coming into California largely for seed purposes, and some new potatoes are being shipped to Oregon from California. New potatoes are reported as selling in Los Angeles at from \$1.50 to \$2 per box. Australian onions are weaker this week and are quoted considerably lower.

Potatoes:
River Whites 75 @ 85c
Sweet Potatoes, per cti. 2.10 @ 2.25
Oregon Burbanks 75c @ 1.00
Onions: Australian 4.00
Bermuda, crate 2.00 @ 2.50
Garlic, per lb. 25 @ 30c
New Potatoes, lb. 2 @ 4c

Dairy Produce.

POULTRY.

The turn of the young stock came this week. Large broilers and fryers, which remained stationary last week when other advances occurred, moved up this week; and young roosters, notwithstanding the recent ad-

vances, moved up another cent from last week's quotations. Some shipments or Eastern stock have arrived, and these have been absorbed readily without having much effect on the market.

Large Broilers 28 @ 30 c
Small Broilers, per lb. 30 @ 35 c
Fryers, per lb. 25 @ 27 c
Hens, extra, per lb. 20 @ 21 c
Hens, large, per lb. 20 @ 21 c
Small Hens, per lb. 20 @ 21 c
Young Roosters, per lb. 23 @ 26 c
Squabs, per doz. \$ 2.00 @ 2.25
Geese, per pair 2.50 @ 3.50
Ducks, doz. 6.50 @ 8.00
Turkeys, live, per lb. 20 @ 21 c
do dressed, choice. 23 @ 25 c

BUTTER.

The market has been unusually steady this week, though there was something of a boom in extras in the latter part of last week and an easing off Saturday. For several days the top grade has held steadily at 23c. Other grades are also a half cent higher than they were last week.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras ... 23 22½ 23 23 23 23
Prime
Firsts ... 22½ 22 22 22½ 22½ 22½
Firsts ... 22 22 22 22 22½ 22½

EGGS.

Extra eggs have held steadily at 22c all week and are still quoted at that figure. Firsts have crept up a little closer to the top price and are now quoted only 1c below extras. Selected pullets, on the other hand, have lagged behind, and are now at the same figure as a week ago, notwithstanding the advances in other grades.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras ... 22 22 22 22 22 22
Firsts ... 20 20 20½ 20½ 21 21
Selected
Pullets. 19½ 19½ 19½ 19½ 19½ 19½

CHEESE.

There have been steady drops in cheese during the last week, owing partly to larger arrivals and partly to a lack of interest on the part of buyers. Further declines are expected. Fancy California Flats, per lb. 13 c
New Young Americas, fancy. 16½c
Monterey cheese 13 @ 14 c

At Los Angeles the dairy produce markets for the past week have been as follows:

Wed. Thu. Fri. Sat. Mon. Tu.
Butter:
Extras. 23 23 23 23 23 23
Eggs 21 21 21 21 21 21
Cal. cheese:
Flats ... 16½ 16½ 16½ 16½ 16½ 16½

Deciduous Fruit.

The arrival of cherries in quotable quantities put a new interest in the fruit market. These are of the Purple Guigne variety and found a ready sale. The first car-load shipments of cherries to the East are due to begin in about one week. Strawberries are quoted lower all around, owing to larger arrivals, poorer stock and greenness. In apples the only change is a marking off of 25c from the top price for Oregon Spitzenbergs.

Strawberries:
Southern, crate 50 @ 75c
Fresno 75c @ 1.00
Banner, chest 5.00 @ 7.00
Longworths, chest 8.00 @ 10.00
Apples: Newtown Pippins 1.25 @ 1.75
Oregon Spitzenbergs .. 1.40 @ 2.00
Cherries, 10-lb. box. 1.50 @ 1.75

Dried Fruits.

There are supposed to be some peaches still in the hands of the growers, but there seems to be little disposition to put them on the market just now. There have been some rather heavy arrivals of raisins this week, indicating that the 1913 stock is cleaning up well. The dried fruit market is now almost exclusively a speculative one as far as the growers are concerned. There is a lot of short-crop talk in various lines, and from the eagerness of buyers it looks as though the talk is based on facts. From various parts of the State come reports of offers for new crop prunes as high as 5½ and even 6 cents. Apricots are also reported short in many sections. The stronger feeling in future dried fruits in California seems to be having its effect on the Eastern market, as is shown by the following

from the New York Journal of Commerce:

"Reports indicate that the activity in future California prunes is confined to the buying back by packers of contracts made at the opening prices. The promise of a record-breaking crop, based on the unusually heavy bloom, has been dissipated by the unprecedented drop of young fruit following the season for setting. While no definite explanation of this early drop is made in advices now coming from California, it is inferred by those best posted that it is due to the dry season, which left the trees too weak to bear big crops in spite of favorable weather conditions so far this season. Estimates received by local representatives of the packers as to the probable size of this season's output have been constantly decreasing of late, the latest being 90,000,000 to 100,000,000 pounds, most of the guesses being nearer the smaller figure. Last year, with a crop of about 100,000,000 pounds, there was a carry-over for 1912 of some 50,000,000 pounds, but the present spot supply is small and at the present rate of consumption is expected to be cleaned up before the new crop is available for use in Eastern distributing markets. Packers have lately been active in buying back early 1914 contracts and, as they offer a satisfactory premium, have been very successful, according to current reports. They are still seeking resales, and this constitutes the bulk of the business now going on in futures. Most of the packers have withdrawn offerings, and the few who are disposed to book orders are asking rather high prices, as indicated by quotations of 5½c f.o.b. four-size bulk basis on 40s to 60s, with premiums of ¼c on 40s and of ¼c on 50s from one quarter in the Santa Clara valley and of a 6c four-size basis f.o.b. on 40s to 70s from another.

The strong upward trend of prices on future California prunes is reflected by a firmer feeling in spot goods, though there has been no quotable advance in the latter as yet. The demand for spot goods at present is of a moderate jobbing character.

"In the balance of the list there were no fresh developments yesterday. There is not much interest shown at present by local buyers in either spot or future offerings, but there is no pressure exerted by holders to secure business, and the market closed with prices on a steady basis."

Evap. Apples, 1913 Nominal
Apricots, 1913 Nominal
Figs: White Nominal
Black Nominal
Calimyrna Nominal
Prunes, 4-size basis Nominal
Peaches 4 @ 4½c
Pears Nominal
Raisins (in sweatbox):
Loose Muscatels 4 c
Thompson Seedless 5 @ 5½c
Seedless Sultanias 4½ @ 4½c

Citrus Fruits

The orange market is gradually getting into better shape, and from now on better prices are looked for. Florida is about clean of fruit and the heavy rush from California is over with, although there will be a large number of cars to be sent East daily in order to get the navels out of the way of the valencias which will come later. Lemons are still dragging, owing principally to heavy foreign receipts.

At the auction held on Monday, April 20th, at New York, 44 cars of navels averaged from \$1.85 up to \$2.60 per box. Other auction points averaged with New York on that day. Lemons brought from \$2.10 to \$3.60 per box.

Total shipments from California to April 19th, for the season, were: Oranges, 19,899 cars; lemons, 1,070 cars. According to Manager Powell of the California Fruit Growers' Exchange, the State will market 45,000 cars this year, which means that there are nearly 13,000 cars of navels besides valencias yet to be sent out.

Oranges and lemons are in fair supply in the San Francisco market, and the demand is fairly steady at unchanged prices. The supply of grapefruit is larger, and prices have been marked off.

Oranges: Navels \$ 1.00 @ 2.25
Tangerines, crate 75c @ 1.25
Grapefruit, seedless 1.50 @ 2.50
Lemons 1.75 @ 3.50
Limes 5.50 @ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Both almonds and walnuts are practically out of the market as far as the wholesale trade is concerned, although the same old prices are given as quotations. Reports as to the coming crop are not so favorable this week, as it is claimed that the almond groves are by no means uniform as to the coming crop.

Almonds:	
Nonpareils	19 c
1 X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

There are no further declines in honey this week, the reaction being felt in both comb and extracted. There is not much selling movement at present.

Comb: White	12 @13 c
Amber	10 @11 c
Dark	9 c
Extracted: White	5 @ 6 c
Amber	4½ @ 5¼c
Off Grades	3 @ 4 c

BEESWAX.

The demand for wax continues very light, and what few transactions there are, are at the old figures.

Light	30 @33 c
Dark	28 c

HOPS.

There seems to be next to nothing doing in California, though San Francisco buyers are operating to a certain extent in Oregon. Sales are reported at various points in Oregon at 16, 16½, and 17c, and a number of miscellaneous sales at from 13 to 15c. Buyers are offering as high as 15c for the growing crop, though the report comes from Portland that this figure will likely be lowered.

1913 crop	15 @17½c
1914 crop	14 @15½c

Live Stock.

There is some little talk of lower prices for live stock, though the few changes reported indicate a firmer market. Business has been rather dull in this market for some time, but it is claimed that any lowering of the price for live stock will abruptly stop importations from adjoining States, and this serves to check a decline. Dressed hogs and veal are a little weak.

Steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼ @ 6½c
No. 2	5¾ @ 6 c
Bulls and Stags	3½ @ 5 c
(Grass-fed cattle, ¼ @ ½c less.)	
Calves: Light	8½ @ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs.	8¾ @ 9 c
100 to 150 lbs.	8½ @ 8¾c
Prime Wethers	5½ @ 5¾c
Ewes	4½ @ 5 c
Milk Lambs	6 @ 6½c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11½ @12 c
Veal, large	12 @13 c
Small	14 @15 c
Mutton: Wethers	11 @11½c
Ewes	10 @10½c
Suckling Lambs	13 @14 c
Dressed Hogs	12½ @13½c

WOOL.

San Francisco wool buyers report a steady market at the former quotations. Advices from Boston show a shortage in California wools, though the backwardness of mill buyers has prevented any advance in the Eastern prices for California stock. There is some talk of English buyers entering into competition with American buyers in the Pacific Coast markets, but so far there is no tangible evidence of this.

Spring Clips:	
San Joaquin	12@14c
Humboldt and Northern	15@19c
Calaveras	14@16c

HIDES.

Hides remain at previous high figures. Most of the take-off is going to Eastern tanneries, the California tanners being unable to use large quantities at the present prices.

Heavy Steers, over 56 lbs	15 c
Medium	14½c
Light Steers, under 48 lbs	14½c
Heavy Cows, over 50 lbs.	14½c
Light Cows, 30 to 50 lbs.	13½ @14½c
Kip	14½ @15½c
Veal	17½ @18½c
Calf	17½ @18½c
Dry—	
Dry Hides	25½ @26½c
Dry Kip, 10 to 15	24½ @25½c
Dry Veal, 5 to 10	29½c
Dry Calf, 7 down	29½c
Horse Hides—	
Salt: Large	\$2.75
Medium	2.25
Small	1.00

HORSES.

There has not been much doing lately in horses, though the abundance of feed and the report that horses of the best quality are to be in firmer demand has had a tendency to stiffen the ideas of holders of first-class stock. The business in these appears to be done more and more by private buyers in the country, the stock offering locally being frequently of off grades.

Heavy drafters, 1700 lbs. and over	\$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500	200@225
Wagon Horses, 1250 to 1350	150@200
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	75@100

MULES.

1200 lbs.	\$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

Deciduous Crop and Market Prospect.

Sacramento, Cal., April 20, 1914.

Reports are generally current at this time of the year that the Eastern crops are either abnormally large or entirely damaged. We have made a general and careful survey of all the fruit districts of the United States and, from the information that we have before us, we have every reason to believe that the Eastern crops in general will be light.

The crops from some of the States seem to be like the proverbial cat endowed with nine lives, and despite the persistent rumors that Georgia and Texas, likewise Arkansas and Missouri, have been seriously hurt, history shows that these States generally come through with sufficient fruit to affect our Eastern sales. However, this season precedents seem to be shattered, and the following may be considered as authentic:

Georgia, 75% of a crop, or 5000 cars, all peaches; Arkansas, 50%; southern Missouri, 50%; central Missouri, 25%; New York State, 35%; Maryland, 50%; Delaware, 50%; New Jersey, 50%; Connecticut, 25%; Michigan (peaches), 50%; Utah and Colorado, 80%.

The latter two States, however, are not out of danger, as they are liable to be damaged from frost any time during the next 30 days.

The Northwest, Washington, Oregon and Idaho all report favorable indications for a good-sized crop, although they are affected by a drop in June, which will undoubtedly reduce their present estimate.

California will probably not market more than 75% of a crop of tree fruits. Cherries in all districts are very light. Bartlett pears on the Sacramento river and Suisun and Vaca valley are light, as are also certain varieties of plums.

Placer county points on nearly all varieties, with the exception of cherries, Crawford peaches, Alexander and Hales, Grand Dukes and Diamond plums will average about 75%.

Elbertas, canning and drying peaches, in the Marysville district and also in the San Joaquin valley are reported heavy.

Grapes, except in vineyards not irrigated, are set well, and the cutworm up to the present has not done very serious damage.

We have every reason to believe that we will enjoy a successful sea-

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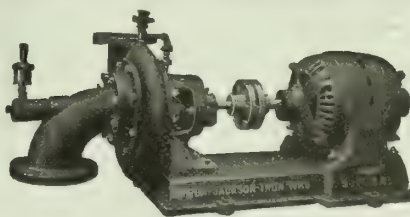
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son, though it is unreasonable to expect the same prices we had last year. Already the demand for cherries is very brisk from all districts, and if the same feeling continues throughout the season we will experience no difficulty in moving the entire crop.
CALIFORNIA FRUIT EXCHANGE,
J. L. Nagle, Gen. Mgr.

PUBLISHER'S DEPARTMENT.

Last week was our big week for securing new subscriptions. Many times during the past few years we have booked over 200 new subscribers in a single week, but from April 13th to April 20th we added more than 300 new paid subscribers to our list. The RURAL PRESS has a fine corps of solicitors at work in the field, and we expect during the balance of this year to add more than 400 some weeks and a good average every week. We ask our friends to help us to place this journal into the home of every English-reading farmer of California.

Work on the seventh edition of "California Fruits" is progressing nicely, and if the special shipment of book paper, now on the way from mills, arrives on time, we feel sure that we will have books ready for delivery by June 1st. If those whose orders for the sixth edition we have had to return will send in their renewals we will file them and fill them from the first lots from the printer.

"Cows in the season of lactation require more salt than at other times, and cows that give the most milk require the most of it," says Dr. S. M. Babcock, inventor of the Babcock test. "The milk from cows that had no access to salt turned sour in 24 hours less time than the milk from cows on the same feed plus the salt. After being deprived of salt for three weeks some of the cows would eat horse manure and dirt where salt had once been fed, and would chew pieces of clothing saturated with perspiration. Salt should at all times be kept where the dairy cow can partake of it ad libitum."

It is just as necessary for all animal life, and we urge our California stock growers to keep salt available for all stock at all times.

We have been sending out our new book, "One Thousand Questions in California Agriculture Answered," at the rate of about sixteen copies per day since the first of the year. While these sales are gratifying, yet we want to increase them. Until every up-to-date farmer has a copy, we will not be quite happy. The book is needed on every farm—send to us for our special subscription offer in connection with this book.

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FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Farm Development, Hays	\$2.00
Manual of Laws	2.25
Farm Buildings	2.20
Breeding Farm Animals, Marshall	1.60
Hog Book, Dawson	1.60
The Dairy Farm, Gurlier	1.10
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
The Hop, Myrick	1.50
Meadows and Pastures, Wing	1.50
Trees of California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50
Farm Gas Engines, Brate	1.10
The Book of Alfalfa, Coburn	2.00
Swine in America, Coburn	2.50
Feeds and Feeding, Henry	2.25
Date Growing, Popenoe	2.00

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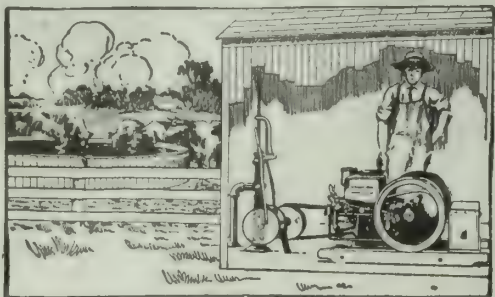
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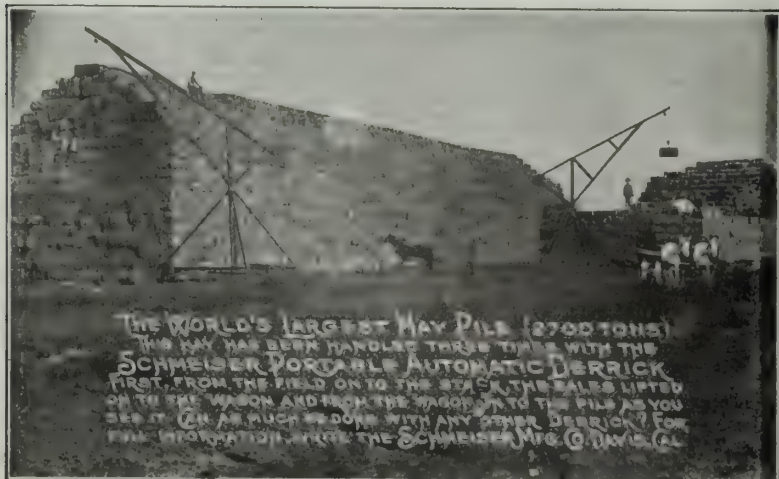
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The staves are 2x6, carefully tongued, grooved, bevelled and splined, finished with machinery especially adapted for that purpose. The ends of the staves are square, and when joints are necessary, they are provided with steel splines which make the silo air-tight.

It is hooped with heavy round iron hoops between doors and at extreme top and bottom, using $\frac{3}{4}$ inch hoops at bottom where pressure is greatest, and $\frac{5}{8}$ inch hoops at top.

These hoops are in sections, using a 6 inch special upset thread, and are provided with the best grade malleable iron patented lugs of the "straight pull" in-line type, which affords ample take-up when the silo is empty.

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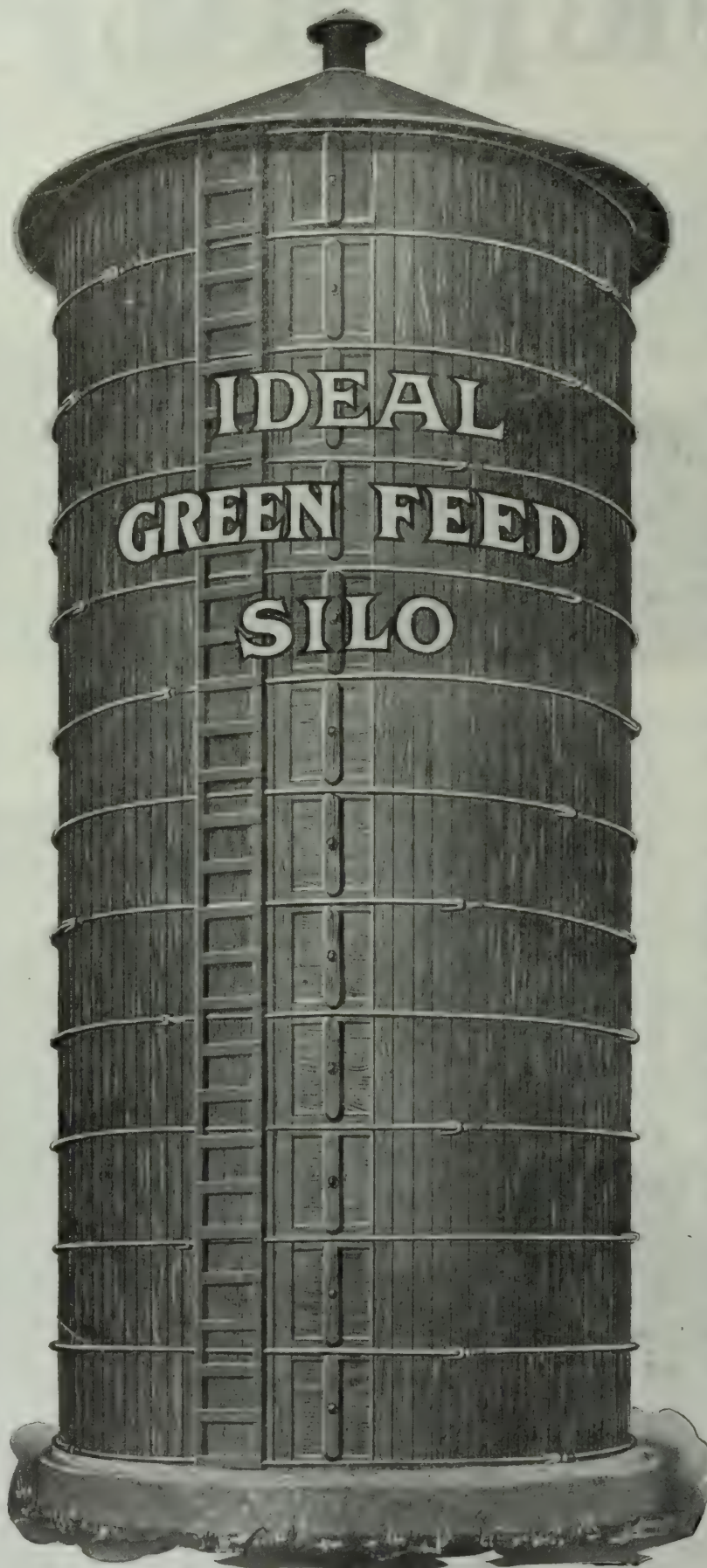
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The exclusion of air is necessary for the proper production of silage.

The walls of a silo should be non-conducting to heat, cold and moisture.

Mature corn makes silage of better quality with less waste.

Silage undergoes a ripening, somewhat similar to the ripening of cheese, which softens the fibre, makes more digestible the proteins, and adds new and agreeable flavors. This ripening occupies from three to four weeks.

Any farm product can be siloed, providing there is sufficient sugar in the mixture to be fermented into acid to preserve it.

The following mixtures silo successfully and make a very desirable and nearly balanced ration: Alfalfa and rye; clover and timothy; or wheat or oats; oats and peas; and corn and cow peas or soy beans.

A round wood stave silo, properly tongued and grooved, has proven the most satisfactory.

Nothing excels the feeding of silage, during the dry summer months, for keeping up the milk flow to its highest point.

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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 18.

SAN FRANCISCO, SATURDAY, MAY 2, 1914.

Forty-Fourth Year.

Silage and Alfalfa for Range Cattle.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

When the Tehachapi Cattle Company first announced its intention of feeding and fattening range cattle along lines similar to those used in the Middle West, old timers shook their heads and said, "You've got to show me." But when Roland G. Hill, who has been the propelling influence behind the undertaking, satisfied himself that such a thing was practicable, something had to happen; and that something in this case has been the finishing of 1000 head of range steers, at a profit, on a ration composed chiefly of alfalfa hay and corn silage. Although still a young man, long and hard experience on the ranges had shown him that the old system of cattle-raising in this State did not produce the largest possible returns, for in years of light rainfall the result of several years' breeding was often wiped out with one sweep, which was a big money loss for several years afterward as well; nor was that the only bad thing about the old system. Taking the good and bad years on an average, the ultimate results were fairly good, but the fact still remained that a big chunk of the profits was whacked up with outsiders who were making a nice thing of fattening the stock from the range to prime condition for the trade.

Fattening His Own Range Cattle.—

The proposition, then, was how to kill both of these birds with one stone; and in order to see how such results were accomplished in the East, a trip of inspection was made through those districts where progressive feeding methods were in use. There it was found that the one big bet, almost a sure winner, was the silo and corn. Of course, other feeds were used to take the place of the protein contained in our alfalfa, which he quickly saw should be a big asset in connection with corn silage.

He was convinced that with a ranch which could furnish these two feeds for fattening the cattle raised on his own range the proposition was almost sure to succeed. As none of the land owned in the mountains was suited to alfalfa, the next step was to look elsewhere. Interesting moneyed men in the scheme, a company was formed, and the 2400-acre Greenfield ranch near Bakersfield was purchased. The range land was also increased until 25,000 acres have been acquired at this time.

Results Prove the Question.—The development of the valley ranch was started just about a year ago. In that time 2500 tons of silage has been grown and fed, 300 acres of alfalfa land leveled, checked, seeded, and some hay harvested; several hundred more have been

leveled, checked, and seeded this winter and spring; a thousand head of steers fattened and marketed at a profit, besides other work such as the erection of six 500-ton concrete silos, the building of feed lots, and—what that master of details, Hill, says is of most importance—the establishment of an organization that will take the worry and care off his shoulders to a large extent in future years.

With all of the mass of detail work, and with the many obstacles that are bound to arise where an undertaking of such magnitude is started, the results of this year's feeding prove conclusively that the principles involved are sound and that the old timers' "show me" attitude has been satisfied.

Feeding the Cattle.—With five silos full, the feeding was started about the first of November. Most of the stock was two years old, Arizona bred, with a scattering of native cattle. All feeding was done in troughs, the silos being located at either end of the feeding lots, a track between the troughs enabling all of the feeds to be distributed from a horse-driven car with the least labor; for labor enters into such projects in a large way.

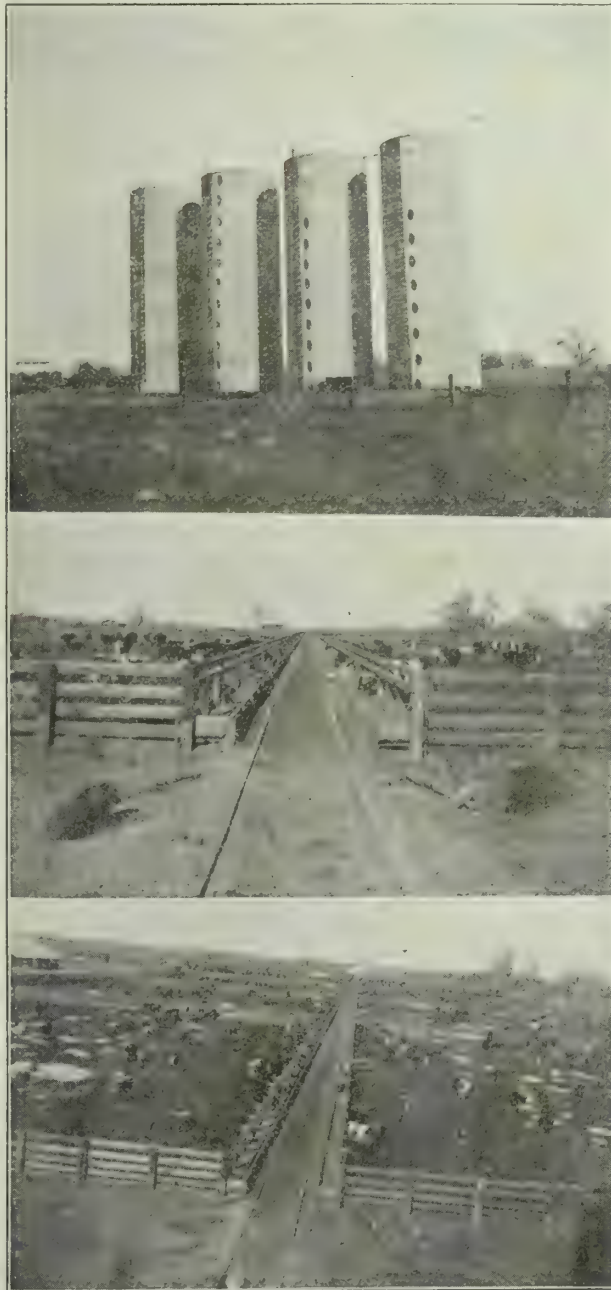
The silage fed varied from 30 to 35 lbs. per steer per day, together with all of the chopped alfalfa hay that they would clean up. The young alfalfa did not produce enough hay for so much stock last year, and much of that purchased was coarse and not always satisfactory. Another year this will be overcome by raising the hay and cutting it at the proper stage, and instead of feeding it in a chopped form, the plan is for all hay to be cut and cured before, or at about the time, that it is blossoming, and feed it in racks in the feed lots.

Due largely to the poor quality of the hay, concentrated feeds were used; cottonseed meal, ground barley, and kaffir corn all gave good results.

The steers, which averaged about 950 lbs., were fed until they weighed 1200 to 1250, and one pen of native stock made an average gain of 2½ lbs. per day for 100 days. These, of course, did some better than the Arizonas, and that is where the range land will be of value in future years; for only stock raised on the Company's range land will be handled.

No Horned Stock for the Future.—Many of the lessons taught by this year's feeding will be a big benefit in future years: two examples being the loss through horned cattle and muddy corrals. All of the stock, this year, was horned stuff, and it was found that it takes a great deal more room to handle such stock, and that the gains are not so satisfactory as where dehorned cattle are being handled.

As no provision was made for muddy weather, and as this year was exceptionally wet, some loss was experienced from this source.



Feeding Outfit of Tehachapi Cattle Co.

Above: Four of Six Silos. Center: Feed Troughs and Tramway. Below: General View, Showing Collocation of Yards and Silos.

(Continued on Page 530.)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
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E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., Apr. 28, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maxi. Past Week.	Mini. Past Week.
Eureka	.40	34.85	42.23	56	40
Red Bluff	.16	32.53	23.15	72	42
Sacramento..	.01	19.33	18.68		44
S. Francisco..	.02	28.94	21.23		48
San Jose.....	.02	18.98	15.99		38
Fresno.....	.02	10.74	8.87	72	44
Independ'ce	.07	11.51	8.11	62	30
San L. Obispo	.00	30.92	19.38	64	44
Los Angeles..	.20	23.07	15.04	68	48
San Diego.....	.48	9.54	9.52	66	50

The Week.

The gladdest thing of the week, passing any strictly agricultural phenomenon which has come to our attention, is the apparently visible end of the "1914 war with Mexico"—mention of which will serve to estimate the recency of our school history books for some years to come. As we write on Tuesday of the week, it seems as sure to end as seven days ago it seemed sure to begin. To be perfectly frank, the outbreak seemed to us to indicated that international peace doctrines would not work, and we indulged in a concealed prophecy to that effect—for which sin we now humbly envelop ourselves in penitential burlaps and potash. Our mistake came from failure to recognize the efficiency of the Pan-American outfit which Colonel Barrett has maintained in Washington, chiefly for social and commercial purposes, as it seemed to us. We have to acknowledge that our conception of this institution was also wrong, and that we should have recognized it as a product of long-distance statesmanship of the highest order. And so when Brazil was chosen as the representative of the United States in the hostile capital, and almost immediately there came the proposition that Argentine, Brazil, and Chile act as mediators, and this trio succeeded in caving Huerta down the bank within a day and practically closed the war before our invading army could get to the border—then it dawned upon us in a flash that "peace hath her victories no less renowned than war," and that the Pan-American institution can justly claim to be the greatest pacificator on earth. It is also wonderful in its effect upon the outlook of the Monroe Doctrine, which automatically gets a new, strong patch upon its pantaloon, and, in facing its manifest destiny,

can respectably turn its back upon the potates of the Old World. For are we not coming to a grander conception than ever of America for the Americans, through peace and not through war? And we set free a new emblem in the sky—the dove of peace rejecting the olive-branch symbol of the Old World and carrying in its beak a banana, token of the fullness and prosperity which tropical America gives to this hemisphere. And this device, too, is the invention of Colonel Barrett, aforesaid.

Agricultural Credit in Congress.

And now that the cruel war is over (a statement subject to revision in our next issue) we hope Congress will find a chance to come through with some of the many propositions before it, looking to the establishment of rural credit machinery in this country, so that farmers can get money at less interest rates and with greatly reduced cost of handling the money. Some readers are reminding us that we are not giving them any tips for action on the subject which they regard as of wide and immediate importance. They say that last December we took them out in the dark with a candle and a grain sack and told them to stay there until something flew out of Congress and into the sack. We have to confess that, like others who play that hoary game, we went into the house and to sleep and did not watch to see how long they held the sack. Some of them, however, advise us that they are still holding the sack, though the candle blew out some time ago. All that we can say in our own defense is that nothing like a credit quail has flown out of Congress yet and, therefore, they have not missed anything, even if they have caught nothing. And that is not an indication that no rural-credit fliers have not passed congressional portals, inward bound. The fact is that the perching places are pretty full and there is something of a hullabaloo as to whose bird shall be flown forth with the banana of political advantage to serve the farmer for the party's sake. The most active congressional organization during the last three months has been the joint sub-committees of the Senate and House Committees on Banking and Currencies. This joint committee took 1000 pages of testimony between February 16 and March 18 last, and heard about all the various pending propositions, no doubt. The California member of that committee is Congressman E. A. Hayes, of San Jose, and we doubt not he will be glad to do everything he can to supply printed information about the matter to all Californians who may address him on the subject at the House of Representatives, Washington, D. C. There seems to be a natural drift toward a desire to make the reorganized financial system of the country, including the regional reserve banks, play a part in the easier financing of agriculture, but just how, does not yet appear. Current telegrams promised a report from Mr. Hayes' committee the first week in April, but Huerta or some other apostles of discord seem to have prevented agreement thus far. Last week we received a copy of a new report by the U. S. Rural Credit Commission commending a scheme of "personal or short-term credit" which aims to prepare organized farmers so that they may share in the use of rediscounts by the new regional reserve banks in a way similar to that by which the national banks are to use these reserves. This is "Part III of Senate Docu-

ment No. 380," and we presume copies of it will be sent to all who apply to Senator Duncan U. Fletcher, Senate Chamber, Washington.

We have refrained from presenting and discussing the various schemes which come to us because we apprehend that the theoretical aspects of these schemes will strike our readers as rather dry and remote. We have thought the subject might be rendered more concrete by waiting to see what could get through a congressional committee and be therefore considered a pending proposition, to receive the promotion or pounding which our constituency might have in store for it, according to their judgment of its desirability or otherwise. And so, in a way, we have been holding the sack ourselves, just as we set our readers to doing last December, and are probably as peevish as they are over the scarcity of wild game.

Of course, we do not mean that passing a congressional committee or receiving an administration endorsement means that a measure should be supported, but it does constitute a thing a practicable target to fire at, while taking up individual propositions, which have no chance to get anywhere, is like trying your marksmanship on a lunar halo. But every man who is interested in rural credit plans, and every farmers' organization which has debating taste and power, should go at the whole subject, in the light of both theory and experience, and make declaration in favor of fairer finance for farming for certain specific reasons, and thus accumulate force for the realization of methods which shall later seem to be wisest and best and possible of enactment.

Disclosing a New Continent.

Readers should not miss the contemplation of a new facet which Col. John P. Irish cuts upon the gem, "California," by his direct and forceful English, which appears upon another page of this issue. This is not really a new gleam from the dark, for the rich lands and their immense capabilities have been known ever since pioneer times, but never so widely known as they should be. They are unique in their characters, considerable in their requirements, and they have probably lingered in inappreciation because not adequately known and measured both in their capabilities and their requirements. During the last few years they have made most notable advances in public esteem and in secure development. Why they have lingered for nearly two generations in the half-light may be variously explained, but it seems to us that they have waited chiefly because California as a whole is so great and responsive to the arts of production. The region is compared to the delta of the Nile. As we understand history, the development of Egypt proceeded more than 5000 years ago from the delta to the plains higher up. Californians, 65 years ago, crossed the delta of the great rivers, possessed the plains, and are now awakening to the desirability of the delta lands. Why did these youngsters of the world reverse the courses of their great prototypes in the sequence of plain and delta farming? It seems to us the answer must be found on the plains and not in the delta. The valley of the Nile is so narrow that the Californian would be tempted to call it a canyon, if its enclosing walls were thousands instead of hundreds of feet in height: the valley of California is so wide that its enclosing mountains, as seen from the center, seem only hundreds of feet high in-

stead of thousands, as they actually are. Actually the valley of California is from ten to forty times the width of the Nile valley: is it any wonder that a few thousand Californians should really have been lost for half a century on the plains of such a valley—so full of fertility, so easy to develop, so easy to get—simply for the asking at the time of the beginning. It is fair to presume that the Egyptians would have neglected their delta for the riverside plain above, if it had been so spacious, so well protected, so ready for the seed as the California valley has been for ages. This reflection leads us to believe that Californians neglected delta development so long, or rather but scantily labored at its development, because other parts of the State were so responsive and so easy. But the time has come for the development of the delta by all the art and enterprise which engineering investment and public appropriation can achieve. It is a region which comparatively few Californians have ever seen and fewer, perhaps, appreciate. It is thoroughly opposite to conventional conceptions of California conditions, and none the worse for that because it is really a remarkable addition to the resources and the industrial suggestiveness of the State. It will figure more largely in the greater conception of California which the future will realize. Colonel Irish's article is a force in that direction, and it seems to us a fair conjecture that as our Nile delta is set in an environment so vastly superior to that of the Nile delta of old, so its future may be greater in millenniums to come. But of that some one will hear later.

That European Invasion.

After all it seems possible that California may not be put to it to dispose of such a throng of immigrants as has been predicated upon the opening of the canal. Some weeks ago the Washington authorities, by inquiry, found out that no such moving throng as was threatened because of steamer tickets contracted for, could be discovered. Now comes the news from Vienna that the Austrian government has stopped the emigration of youths and men under the age of 34. They will not be permitted to cross the frontier unless they can produce a passport, which can only be issued to those who can prove that they have performed their military service, including the full term in the reserve, which really means twelve years of service for the average man. It is apparently expected that at the age of 34 a man has usually contracted family and business ties which effectually prevent him from leaving his native land, which is evidently the end aimed at. If this works well in Austria it is likely that other European governments which are paternal enough in their character will settle the question of declining populations in the same way. This will perhaps reduce immigration to figures which may be really desirable—at least in the newer parts of the country. It is also interesting that in the northern tier of States satisfaction is being expressed that Canada is declining in attractiveness to moving Americans. During the last ten months of 1913, immigration into Canada from Great Britain increased by 5000 persons and from Continental Europe by 21,000. But during the same period the United States sent 25,000 fewer emigrants to the northern Dominion than in 1912. And the return of Americans from Canada is a no less marked feature of

the year. All of which seems to indicate that our coast may have relatively more American-born and fewer other people to Americanize. We like our own people just as well as European governments do, and we have vastly less trouble in keeping them at home.

Spraying for Vine Hoppers.

A hopeful statement in the control of vine hoppers appears upon another page of this issue. Professor Quayle assures the vine grower that killing by spray is more promising than hitherto regarded, if it is done well and at the right time. There is, however a little modification required in the statement as printed. Instead of the first of June as a fixed date, it may be advisable to spray in May, rather than as late as June. Look for the condition of the bug, as described, and spray when it reaches that stage.

Queries and Replies.

Querists must submit full names and addresses.

Help for Sour-Sapped Trees.

To the Editor: I would like your opinion whether or not the hot weather during the time so many of our peach and almond trees were standing in saturated soil on low and undrained ground did not contribute very much to the sour-sap condition? I notice some are trying to save affected trees by digging about them and cutting back the branches. It seems to be a useless trouble. This same condition is likely to occur again. Plant other trees if a good surface drainage cannot be provided. The loss has been considerable, even trees several years old and over giving up the effort to live.—ELMORE CHASE, Fair Oaks.

This is one of the conditions which we have had in mind in recent comments on planting trees on unready land. A fruit tree should never be planted in land which fills with standing water either from rainfall or irrigation. Such water causes root hairs to decay and it prevents aeration which is essential to root action—except, perhaps, in plants naturally more or less aquatic, and some of them probably require that the air come in moving water. We go a point farther than you do: we believe a fruit tree should not be planted unless the soil has whatever degree of underdrainage (either natural or artificial) that particular kind of tree needs for root-health—and, of course, trees differ in this requirement, as common observation shows. It is, of course, true that in some some soils and some amounts of water the quick removal of the surplus by surface drainage may maintain the hospitality of the soil because the amount absorbed may be soon enough distributed. But sour-sap is not conditioned upon overflow or submergence: it can kill trees where no surface water is seen to stand. Digging about trees, if the idea be to dry out the soil by exposure, might possibly be of some avail while the injury is in progress: it is too late when the injury is done. It is quite possible that the tree may then require a little irrigation rather than drainage—if the soil has become too dry near the surface, for near the surface the re-establishment will most likely occur because it is there that soil heat favors it. As for cutting back, it is the only rational thing to do, because it reduces the top which a reduced output of root hairs must supply with moisture to compensate for evaporation or to hold life until

a new outfit of these sustaining organs of the tree can put out from the root-surfaces. But any treatment for a badly sour-sapped tree, so far as our observation goes, avails little or nothing. Such a tree is dead before the doctor arrives.

Killing Stumps.

To the Editor: I have some sycamore stumps in my garden. They are so close to the house I am afraid to use powder on them, as they are very large. Can you tell me of anything I can put into them to kill them?—A. C. A., Letcher.

You can kill and destroy the stumps by the char-pit method—digging around the stump and filling the excavation with wood dry enough to burn and cover with earth, as in burning charcoal, keeping the fire alive but not burning briskly. Mr. Wisker of Colfax kills stumps by boring three one-inch auger holes around the edge of the stump, just inside the bark, placing in the hole a tablespoonful of cyanide of potassium and saltpeter (half and half) and plugging the hole. Look out for the cyanide: it is a fearful poison and must be handled carefully. We should expect to do the same with arsenic or bluestone.

Alfalfa in Young Orchard.

To the Editor: Please tell me the proper way to plant alfalfa in a young orchard. The ground was leveled before trees were planted, but will require checking now to control the irrigation water. If I throw up border checks along the tree row, will this work any injury to the trees by reason of the trees being in the ground that much deeper? I expect to leave an unplanted strip occupied by the check. Is planting two or three sprouted walnuts in place a good way to start a walnut orchard?—E. E. L., Marysville.

It depends upon what kind of soil it is and how much deeper you expect to make it. If there is much dirt shifted around the tree it usually does harm. In such a case the tree should have been planted a little higher, and yet not so high as to be liable to injury on a dry levee. Trees in alfalfa should have a cultivated strip to themselves, at least while young, the levee being turned up three or four feet from the trees. You can get a good walnut orchard that way if you are successful in grafting later. We do not count it the best way, but it will succeed if well done.

Rosebuds Which Fail to Bloom.

To the Editor: I have a red climbing rose which is loaded with buds and has been for about a month, but it doesn't bloom. Some of the buds are drying up. The bush is healthy and I have cultivated it and manured it. Last year some of the buds did the same way, but most of them bloomed. Last fall I threw some wash water near it and it commenced checking its growth, so have not thrown the water on it since. Can you tell me what is the matter? Do you suppose the wash water had anything to do with it?—C. L. R., Watts Valley.

If the foliage is good and the wood growth satisfactory, the wash water is not to blame. Sometimes buds are sidetracked by mildew, but in that case the young leaves would also be shriveled and ashy-looking. Some roses fail to open flowers satisfactorily because local climatic conditions do not suit them. In that case there is no remedy but to bud over the bush to another variety known to blossom well. Occasionally a bud goes wrong by the work of a weevil which stings the base of the bud, but we never saw them abundant.

Ground Squirrel Eradication.

[Written for the PACIFIC RURAL PRESS.]

Of late years there has been a tendency among land owners to accept the ground squirrel as a necessary evil, and to take only such measures, in most instances, as were necessary to protect their growing crops or gardens. In 1908 it was demonstrated that in addition to their other destructive powers ground squirrels were extremely likely to carry contagious and infectious diseases from place to place. A number of deaths occurred among the rural population, the cause of death in a number of these cases being directly traceable to ground squirrels. When this fact became known, the United States Government and the State Government joined hands to bring about the destruction of these rodents, to the end that the spread of disease by this means might be stopped. This work is now nearing completion and it is believed that in another year or so, at most, the danger of the spread of disease through the agency of ground squirrels will have been eliminated.

While it has been of the greatest benefit to farmers to have this danger of the spread of disease removed, another benefit of equal or perhaps greater importance to the farming community as a whole is that reliable and certain methods have been devised which if properly and consistently applied, will result in the destruction of these animals which have for so many years caused millions of dollars worth of destruction each year.

In order that ground squirrels may be certainly and cheaply destroyed it is necessary that two essentials be borne in mind. These essentials are as follows:

1. A knowledge of the life and habits of the ground squirrel, and the nature and extent of his burrow.
2. The choosing of a reliable and certain means for his destruction, and the consistent and constant application of this method until all squirrels are destroyed.

LIFE AND HABITS.—Ground squirrels live in burrows which are, in the majority of instances, not more than 18 inches to two feet below the surface of the ground, and run in general more or less parallel to the surface. In some cases burrows may go deeper than above stated, and when this does occur it is because of some condition of the ground, peculiar to the spot chosen for the burrow, that causes the animal to burrow so deeply. In general it may be stated that deep burrows are found most commonly on steep hillsides or in places where the hard pan is close to the surface, and it is easier for the squirrel to burrow under than through it; or in rocky situations where the rocks extend deeply into the ground.

The burrows are so constructed that they communicate and intercommunicate underneath the surface. They are then spoken of as "colonies" or "villages". The total length of the burrows in a colony or village may, in certain instances, exceed 500 feet, but ordinarily the length is between 250 and 500 feet. Of course, a colony will have a number of entrance holes, and extensive excavations have shown that the average length of burrow for each entrance hole does not exceed from 14.5 to 15 feet, and as the diameter of the burrow averages about four inches, the average cubic capacity of the bur-

row which continues from each entrance hole is about 1.5 cubic feet.

Female ground squirrels have usually not more than one litter of young in a year; the number of young in a litter varies from four or five to a dozen or more—the average is about eight. The breeding season begins in November and continues for several months, the young being born between March first and June first: this period varies somewhat in different localities.

When the young are six weeks to two or three months old they either leave the burrow in which they were born or are driven out by their parents, and open burrows for themselves in some other locality. The nearness of the new burrows to the place of birth will depend upon how numerous other squirrels are, or upon the location of a desirable food supply.

Ground squirrels are to all intents and purposes omnivorous, though by choice or instinct vegetarians. They will eat any form of fruit, nut, seed, grass, vegetable, cereal or plant, and have been known to feed upon garbage, and, when driven by necessity, to eat other ground squirrels that had been killed, or died.

METHODS OF SQUIRREL DESTRUCTION.

POISONED GRAIN: Barley is the best kind of grain to use. Wheat, oats and other grains have been used, but extensive observation has proved that more uniform and better results have been obtained by the use of barley than with any other grain. Further, it is not so likely that it will be eaten by chickens, quail, pigeons, doves, turkeys and other birds or fowls, nor by sheep or other animals, as will other kinds of grain. The best poison to use is strychnine, the barley being coated with it in accordance with the "Government formula."

The best results are obtained by scattering the poisoned grain on the ground early in the morning, back of the hole. Not upon the excavated dirt, that the squirrel has thrown out. It should not be spread before a rain or when the ground is wet or when there is a heavy dew, as the poison will be washed off and no results obtained. It should be widely scattered so that the squirrel will be compelled to pick it up a grain at a time and place it in the cheek pouch.

The cheek pouch contains no "taste buds", so that a relatively large quantity will be pouched before the animal will get too much of the bitter taste of the strychnine, and as the cheek pouch is lined with mucous membrane, just like that in the mouth, enough strychnine will be absorbed to kill the squirrel, in many instances before there has been time to eat even a single grain. Grain should be placed as above described at ten-day intervals, until the squirrels are materially reduced in numbers, or no more results are obtained, when one of the following methods should be used to complete the work of eradication. It is rarely, if ever, possible to completely eradicate squirrels with poisoned grain, as there are always some that are "too wise" to eat it. The best results can be obtained with grain during the dry season when other food is scarce.

WASTE BALL METHODS.—A ball of waste, jute, gunny, cotton, horse manure, oak gall, or other absorbent material, is saturated with Kilmol or Carbon Bisulphide and placed in the mouth of the squirrel burrow; the

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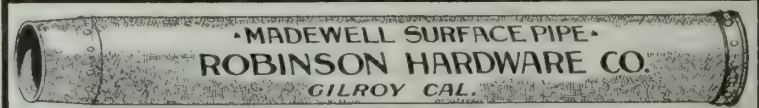
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hole may then be closed with dirt and the gas allowed to diffuse throughout the burrow. This will be sufficient in many instances; as a general rule, however, it is better to ignite the ball with a match or torch. A sharp explosion usually occurs immediately, which forces the burning gas deeply into the burrow. The burning of the bisulphide produces sulphur dioxide and carbon dioxide, both of which are poisonous if breathed for a sufficient length of time in an inclosed space. Kilmol, when ignited, also produces sulphur dioxide and carbon dioxide and contains other powerful irritants in addition which set up a violent inflammation in the lungs of the squirrel, so that the effects are severe and lasting.

The waste ball method is applicable only when the ground contains sufficient moisture to prevent the formation of cracks and crevices through which the poisonous gases could escape. There is also danger of fire where the vegetation is dry enough to burn.

THE SQUIRREL DESTROYER.—The Squirrel Destructor is an apparatus for forcing poisonous gases into the squirrel burrow. It is constructed principally of galvanized iron, and is simply a double action air pump which forces air through a chamber into which one ounce of Kilmol or refined Carbon Bisulphide has been measured. Forty strokes of the pump forces 13 cubic feet of air through the liquid used, thus forming a vapor which displaces the air in the burrow and remains for several hours. The squirrel promptly becomes unconscious and dies in from 20 to 30 minutes to 40 or 45 minutes, depending upon the liquid used and upon the tightness of the ground surrounding the burrow.

The Destructor affords the most certain and positive means for destroying squirrels that has yet been made public. A hole may be treated in one minute and the amount of material required is less than by any other method. It can be used in either the wet or dry season, as such a large amount of gas in pumped in (13 cubic feet, capacity of squirrel burrow 1.5 cubic feet) that even though much of it does escape, the air in the burrow will have been completely displaced and the poisonous gas substituted.

CONCLUSION.—By selecting one or more of the above methods, or still better, by combining two of them, anyone can, with the exercise of a little patience and persistence, absolutely destroy ground squirrels. If he then shows his neighbor the results obtained, he will also destroy his squirrels and mutual reinfestation of their lands will be prevented.

Experience has shown that where ground squirrels have been destroyed to the point that relatively a few remain, those left will have, in a month or so, collected themselves into small villages or colonies, for, presumably mutual protection, companionship or breeding purposes, thus rendering their ultimate destruction relatively easy.

One other point. One must not be discouraged if, after treating the land and covering holes, holes are opened in a few days or weeks, as the majority of these holes, as close examination will show, have been opened from the outside by squirrels that have escaped destruction or have been in hiding when their holes were treated, and have returned and opened them later.

The costs of the above methods are slight indeed when compared with the savings that will result from the destruction of these animals and there is, in addition, the guarantee of freedom from the danger attendant upon the diseases that ground squirrels are prone to.

BERRY SHIPPING TO THE EAST.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

The Sebastopol Berry Growers Inc. are making 20,000 new berry crates of 24 boxes each in the warehouse of the Sebastopol Apple Growers' Union Inc. They had 13,000 crates left over from last year and expect to use all of them this season for shipping berries. Berries for canning are shipped to Santa Rosa in chests.

More Loganberries are shipped than canned, while half of the 180-ton crop of red raspberries are shipped, many as far east as the Mississippi river. Lawtons and Mammoths are mostly canned though some are dried and about one-fifth shipped.

Manager I. N. Cable says with a happy grin that more berries will be shipped this year than ever; and more canned, too; and more dried than in recent years. The acreage and crop prospects are larger than ever before, and "I got into five new carload markets last summer," he said with the same quiet happiness. These were obtained by his personal visits to Lincoln, Neb., Oklahoma City, Chicago, Wichita, and Minneapolis. Previous markets still retained are Butte, Mont., Omaha, Kansas City, Topeka, Denver, and Pueblo.

From another source came the information that in this farmers' organization, Mr. Cable asked and received for his second year's work a \$300 increase over the comparatively high salary paid him the first year, and the farmers were glad to do it. Here lies one of the secrets of success of this organization; they do not object to paying a fair price for a good manager.

A great help in entering the eastern markets with berries from this side of the mountains and deserts and plains, has been the model precooling plant operated by the association. Last season they landed only one poor car in the East and it was only soft, not entirely bad.

The precooler has a capacity of one carload in each of two chambers and requires only four hours to cool the hot summer berries down to 45°. It is the only berry precooling plant in the State, and was very effective on last season's shipments.

THE GOLDEN PRUNE.

To the Editor: I have been interested in the articles from your various readers regarding Golden Prune, and, from what I can learn, believe the orchard we have is one of a few of this variety in the State. Our orchard is the one in Sycamore valley, mentioned by J. D. Smith in your last issue. As for heavy bearing, it exceeds any prune or plum we know of, and we find it makes an excellent dried product, and is unequaled in flavor for canning purposes. We prefer it to all others for our home use. Evidently it is little known, or it would be more generally planted for commercial purposes.

CHAS. J. WOOD.

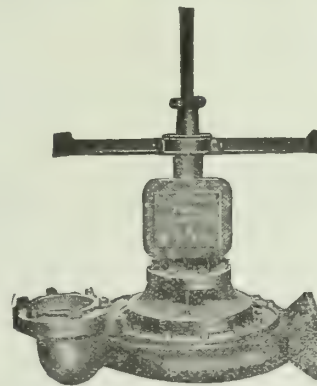
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Spraying for the Vine Hopper.

To the Editor: Last year the damage done by the grape leaf hopper or vine hopper has been variously estimated at from 10 to 25 per cent of the crop of all the vineyards of the State. This may be an exaggeration, but in many sections the loss both in quality and quantity far exceeded this percentage. The Agricultural College has published a bulletin on this insect, in which various remedial measures are suggested. Two of these measures, namely the complete cleaning up of the vineyard before the starting of the vines, and the caging of the overwintering hoppers in hopper cages, have been applied by a few vineyard-

ists with promising results. It is now too late to apply either of these measures. Within a few weeks, however, the new brood will appear in the vineyards and much relief would be obtained by proper spraying at the right time. The enclosed short article by Professor M. J. Quayle of the Agricultural College explains the need of this spraying and also shows the best time and materials for spraying. I think it will be advisable to bring this matter before the grape growers as early as possible.—F. T. BIOLETTI, Berkeley.

PROF. QUAYLES' SUGGESTION.

The grape leaf hopper (Typhlocyba comes, Say) known by many California vineyardists as the "Vine thrips" is a widely distributed grape pest occurring most abundantly in this state in the Sacramento, San Joaquin and Imperial valleys.

The hoppers feed by sucking the substance from the leaf. The result of such feeding is first manifest in the pale spots over the leaf, giving it a mottled appearance. Later these leaves turn up at the edges, often become blotched with red, and finally become dry and brown and drop from the vine.

The leaves thus affected first occur about the crown of the vine, but these extend outward as the severity of the attack increases. Such effects of hopper work may be noticed a week or two after the vines come into leaf. This work is done by the overwintering adult hoppers. With the appearance of the young about May 1, the numbers become greatly increased and thus the injury becomes still greater. By midsummer the second generation of hoppers appears and the numbers are again greatly augmented. If each of the females of the overwintering hoppers lays 100 eggs and half of this number hatch into females, which in turn lay 100 eggs, the progeny from a single pair at the end of the season will amount to over 5000. Last year the injury done by the hoppers was very extensive and the number of overwintering adults now in many vineyards makes it advisable to do what we can to diminish the injury for this year.

By midsummer the hoppers often appear in innumerable numbers and this is accounted for through their powers of multiplication, as indicated above. If the adult hoppers could be killed in the early spring before any eggs were deposited and before any injury was done, and while the growth of the vine was still small, it would be the best solution of the problem. The methods so far devised for doing that have not been found completely satisfactory under some conditions and for some forms of vine pruning. At present the eggs are being deposited within the tissues of the leaf and are out of reach of all remedies. Nothing therefore can be done for these until they hatch and the young nymphs appear on the underside of the leaves.

TIME FOR SPRAYING.—These young hoppers may be killed by means of a spray applied to the under side of the leaves. The time to spray for the nymphs is just before the first of them become winged, and this will be during May or the first part of June, depending upon the season and locality. The exact time may be determined by watching their development. When some of them have reached almost full size it is time to start the spraying.

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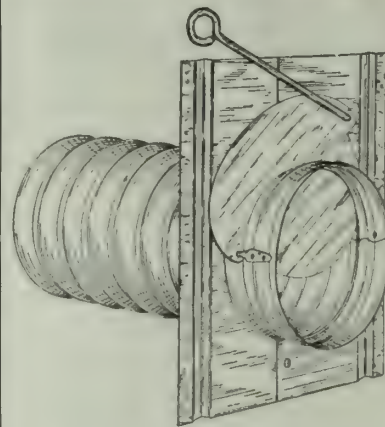
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Spraying earlier than this is not advisable because there are too many eggs, not yet hatched from within the tissues of the leaf, that will not be affected by the spray. And spraying later will not kill those that have acquired fully developed wings because these will fly away and escape the spray.

MATERIALS AND APPLICATION.—Probably the most satisfactory spray for the nymphs of the grape leaf hopper is blackleaf and whale oil soap in the following proportions:

Black leaf 40% (nicotine) 1 pint
Whale oil soap 4 or 5 lbs.
Water 200 gals.

Dissolve the soap in 3 or 4 gallons of boiling water and add this with the black leaf to the 200 gallons of water.

The spray should be thoroughly applied from below so as to strike the under side of the leaves, for the spray will kill only such hoppers as are hit. This is best done by means of an an-

gle nozzle on a short rod, not more than 3 or 4 feet long.

OUTFIT.—The spray outfit should be as light as possible, for heavy outfits are difficult to handle over a well plowed vineyard. If necessary the amount of spray material carried may be reduced below the capacity of the tank. Where the size of the outfit warrants, fixed extension rods of gas pipe may be supported above the vines to extend for 2 or 3 rows on either side. The hose lines are attached to this extension and thus the pulling of the hose around the vines is avoided.

Because some 2500 tons of foreign figs were condemned on account of their general poor condition and because they were infested, the demand for California figs has been materially stimulated in the past few days, and buyers are said to be in the Fresno field offering 4c, with indications that the market is exceptionally strong, as there are not more than 750 tons of the 1913 crop left.

How Turlock Melon Growers Succeed.

[Written for the PACIFIC RURAL PRESS.]

"Three acres of my land produced \$1,395.40 worth of melons last year but there were others in this district who made more money than I did," said W. Brown, of Turlock, who is one of the successful watermelon growers of that section and who usually has about 20 acres planted to that crop.

Now \$465.13 is a pretty big return from an acre of ground, even in California, and it stands to reason that the growers do not always realize such satisfactory returns or else the acreage would be increased by leaps and jumps. The fact is that the melon business has its ups and downs like all other lines of farming and for that reason it requires a great deal of melon growing knowledge to be successful.

Being one of the largest watermelon districts of the State, the growers around Turlock have learned the methods best suited to their locality and for that reason make money if prices are anywhere near what they should be. Perhaps the principal requisite in this district is early planting, for in the melon game it is the fellow who practices the early bird idea that wins out, and according to Mr. Brown it is nothing unusual to plant six or seven times before a perfect stand is procured.

This is due to early frosts which may entirely wipe out several plantings before one is finally brought through, but the prevailing idea among growers is that it pays to plant as early as the ground is warm enough to germinate the seed, and then if the nice weather continues and no more frosts are encountered the crop comes on earlier than the other fellow, who has waited until all danger from frost is over. The conditions this year have been ideal so far, in this respect and the result is that a larger acreage was planted before March 1 than ever before in the history of the section.

Mr. Brown practises a somewhat different tillage system than most others, it being his idea that the condition of the land at the time of planting has much to do with the size of the crop. At the start it should be known that while most of the growers have irrigation facilities it is not a common practice to irrigate and for that reason Mr. Brown believes in having his land in such condition that the seed may be planted in good moist soil, whether the winter rains materialize or not. To accomplish this, he plows his land good and deep in the fall and after harrowing allows it to stand until such time as the planting starts. Only shallow tillage is the rule during the spring as otherwise the ground dries out to a greater depth than is good for the vines, the principle being that the shallower the top mulch the closer the moisture; and that deep plowing in the spring drives the moisture down lower than desired.

In the endeavor to get a good stand and get it early Mr. Brown drills his seed in rows about eight feet apart. After the plants are up with the second or third leaf and after the danger from cut worms and other pests is over, the row is usually pretty well thinned out, but still requires some hand thinning, the average distance of plants left being four feet, although

this varies according to the size and vigor of the plant.

For the past two years the first melons were shipped July 16, the biggest money being made from this time until about August 25, due to the fact that there are few other districts that get their melons off to market so early. The only district that competes in this early market is Imperial county; and while they have melons on the market in the latter part of May, the cost of shipping and the size of melon grown are serious enough factors to allow the Turlock crop a good price when it comes in. The heaviest shipments are made from this district around August 10 as a rule.

Naturally the San Francisco market is the mainstay for the melons from this district, as it is both near and good. The shippers find that the northern markets also can be advantageously used before September 1, but not as a rule later than that date, as the melons from the valley in Oregon come on at that time and dominate the northern markets.

As before mentioned, the prices are rather erratic some seasons, but last year they were exceptionally good, running from \$18 to \$22 a ton. Ordinarily, however, the quotations vary from \$12 early in the season down to \$4 toward the last, growers claiming that they can make money at \$5 to \$7 a ton.

The yield also varies according to the season and to the knowledge used in growing the crop, the average being claimed at 15 to 25 tons to the acre of marketable melons. The cost of marketing watermelons is much less than for most other vegetables, the practice being to ship loose in the car. Straw is used on the floor of the car as a cushion to take off the hard jolts and bumps, this being the only precaution necessary. The average car when loaded in this manner holds about 13 tons.

The two best selling varieties last year were the Kleckley Sweet and the Angelina for the markets in this State, but it has been found that the northern markets prefer the Florida Favorite, a smaller kind.

Home grown seed is not used on account of the prevalence of citrons or pie melons which grow promiscuously in most parts of the melon district, in fact the melon growers contend that laws should be passed to prohibit farmers from growing citrons as they are a big menace to the melon industry.

Knowing the game and sticking to it year in and year out seems to be the most important requirement for growers in Turlock who have suitable melon land.

THE SHORT PRUNE CROP.

To the Editor: The proposition to be faced is this: French prune trees, for fifteen or twenty years after they became recognized commercially, bore regular crops, so much so that it became an axiom in California horticulture that "if you want a crop, plant the French prune." Noting the increased planting, statisticians figured that in a few years we should be buried in prunes and that they could not be given away.

The older trees, however, instead of continuing to bear, have persistently

and regularly declined in crop output, so that, with approximately double the acreage in the State, we do not produce as much, or very little more on the average, than we did many years ago.

That is the proposition, and because it is State-wide, or confined to no locality, I think it a serious situation and one that requires very careful investigation.

I hope growers will look at it in this light, as a broad proposition, and not confuse the issue by the citation of isolated cases or irrelevant experiences. And please eliminate the "weather," for the result is the same, rain or shine.

A proposition, or postulate, included in what precedes, may be this: The

(Continued on Page 527.)



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Road Building Lessons From Abroad.

[Written for the PACIFIC RURAL PRESS by LEONARD COATES.]

During a recent trip abroad I had exceptional opportunity to investigate road construction and maintenance in an English county which for some centuries has been well to the front in road construction and maintenance. The county surveyor kindly showed me his maps, plans, and costs, and gave much valuable information, introducing me also to men in charge of actual road building and repair.

There were several important points in road construction which appealed to

the road with high crown without skidding; if not bituminized, it would cut down.

There are sections of road near London which have been devoted to experimental road making, to test various methods where the heavy motor traffic is enormous. Roads are now built with this constantly in mind, rather than the enacting of laws regulating the weight of the vehicles or the width of the tires.

Drainage must first be attended to, a ditch 4 feet wide and 18 inches deep being dug at either side. This is filled



French Roads are Macadamized.



English Highway Built to Last.

one's common sense, and which were impressed upon me while watching the work and during a conversation with the superintendent in charge. These may be thus briefly enumerated:

1. A road once made with any firm bottom whatever should not be again broken. Make use of any existing solid foundation, filling in, if necessary, where there are any depressions, by using crushed slag or granite.

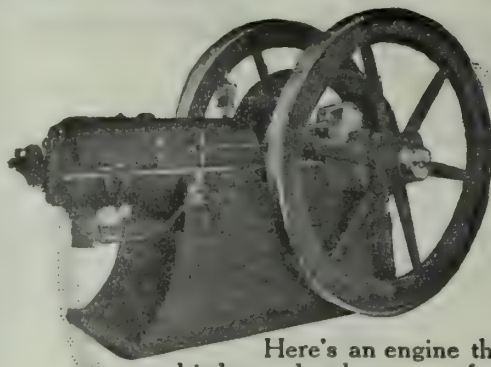
2. A road twenty-one feet wide, reaching to a well defined curb, is preferable to a wide road with a narrow made track, the sides unmade or of dirt or gravel.

3. Roads should be only slightly convex, not with a high crown. Four and a quarter inches rise to the center of a twenty-one foot road was considered difficult. If bituminized, nothing with wheels could travel on

with granite or slag, 7 or 8 in. diameter, and rests against the curb. It forms an abutment preventing the sliding down under heavy pressure.

The same rock material of 4 or 5 inches diameter is used for the foundation, being pressed in with a steam roller while abundance of water is used. The watery mud which is squeezed out is kept brushed back until it settles well in the interstices.

When this is dry, a layer of two to four inch crushed rock is used, which has been previously dipped in a bituminous material. This is rolled repeatedly with a hot roller; and the last layer of finely crushed bituminized rock is rolled in. A space of four or five feet is left on either side for horse travel, the center being too smooth. Such roads have stood eight years without need of repair and under extraordinarily heavy traffic.



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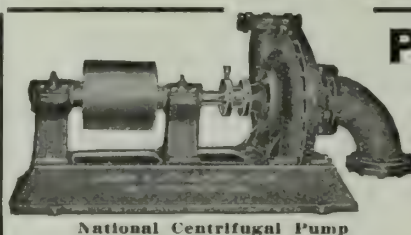
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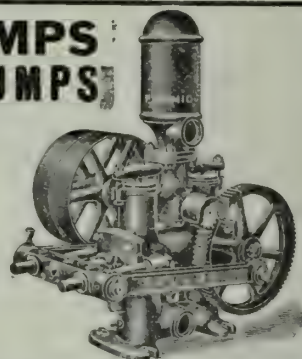
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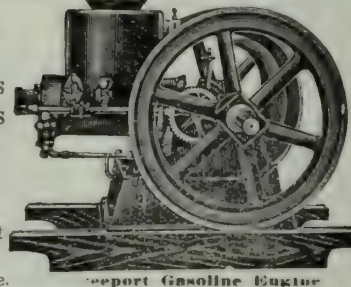
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WHEN DOES THE TREE NEED PROTECTION THE MOST? You know, while it is young and tender; then let Us supply You with Protectors; it's the best investment you can make after setting out Your trees; if Your dealer hasn't them send Your order to Us and We will fill it promptly.

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THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

Drains running under the curb are laid where needed, opening into a ditch outside of the footpath or grass strip which is often an adjunct to the English road. The accompanying photograph shows a typical roadway.

To protect the curb, large granite blocks are set at points where likely to be needed, often at regular intervals.

MACADAM FOR FRENCH ROADS.—All the great French roads are simply macadamized, and in a recent interview with a newspaper reporter, Engineer-in-Chief Lorieux said, and emphatically: "Tell Americans to go ahead and build macadam!"

A road to be durable must have elasticity, and this great engineer figures that frequent repairs, while necessary, cost less than to rebuild on any other plan, even if a better way should be found.

For those roads carrying the most traffic, and nearer cities, he would surface dress with some bituminous preparation.

A typical French highway is here shown. The cost to France during the last forty years is two billion dollars; and the French methods of taxation and road maintenance are probably the best in the world.

How much these European methods have been studied for our own benefit, I do not know. In congested areas, where the traffic is infinitely greater than in the United States, there should be something to learn. What our own State highway will be, who can say? All hope for the best, though the methods employed sometimes seem not far removed from the experimental stage.

RULES FOR HANDLING SHIPPING BERRIES.

[New rules for handling berries to be shipped to distant markets were formulated last week by the Sebastopol Berry Growers through Manager I. N. Cable. The shipping part of their business is assuming large proportions and careful handling is necessary.]

RULES FOR PICKING.—Loganberries to be picked when bright red, pick rows clean of all berries ready for shipping each picking, this will avoid having overripe berries next picking. See that baskets are well filled, this does not mean level, but rounded. Must be clean, no leaves or mashed berries. Careful loading, let teamster stay in the wagon and one man on the ground pass berries to him. Drive slowly and carefully.

Mammoth berries should be mostly black or dark red.

Raspberries should be red, but never riper than a bright red.

Lawton blackberries should be black, but so firm that the pickers never stain their hands in handling them. Should berries of any variety come from the patch dirty, overripe, or not in first class condition, dump them into cannery stock and pay the pickers for picking cannery stock.

Every grower should have stands to pick shipping berries in. The picker should deliver berries whenever he has six or eight baskets in the stand in order not to hold them out in the sun too long.

If these rules are carefully followed by the growers and the same care taken in the warehouse, we have no doubt that all will be well paid for the careful work that we have suggested.

RULES FOR WORKING MEN IN THE WAREHOUSE.—Place crates carefully on

stands six or seven high. Do not drop or jar crates. Hold truck so crates will be as near perpendicular as possible when trucking into pre-cooler or car. Jar fruit as little as possible; this fruit represents dollars. We cannot afford to keep any but careful men.

RULES FOR FIELD INSPECTORS.—Interview each field boss or owner, have him see that berries are picked clean; that all berries ready for shipment are picked each picking; every patch should have at least one person to every fifteen pickers to fill crates and receive berries; if baskets are not well filled send them back and see that they are well filled. If berries are too ripe or dirty, dump them into cannery stock and pay them cannery stock prices for picking. Inspector should see every receiver and instruct all of them how to receive. See the drivers; have them handle the berries carefully in loading; drive carefully until berries are unloaded.

Should the field boss or owner refuse to follow out the instructions, notify manager at the warehouse and leave to him the refusal of the fruit.

SUGAR VS. FRENCH PRUNES.

[Written for the PACIFIC RURAL PRESS.]

John Hartley of Napa reports sugar prunes more susceptible to frost because they shed their calyx at once, while French prunes retain the calyx jacket until the growing fruit bursts it. This protects it from frost, but whether it encourages blossom rot on prunes as it does on apricots, we do not know. On Mr. Hartley's 10-year sugar trees his prospect was never better for a crop till the frost came late in March and killed practically all. A few sugar trees shielded by older French prunes will have a fine crop, while the later blooming French were hurt by the north wind and hot weather. His way of estimating the prune crop is to walk along through the orchard early in April and if he sees occasional prunes he expects a fair crop of large sized fruit (the best paying crop), while if he can see much fruit readily he expects an exceptional crop which must be thinned to make it good sized.

Mr. Olden of Napa, says his sugars saved his "bacon" this year, though somewhat frosted. They bear fruit far out on long willowy branches which bend to the ground under their load or break, as often happens because the wood is brittle. These willowy branches should be pruned back to force the fruit nearer the trunk and make the limbs stocky enough to hold it. The French, on the other hand, bear fruit spurs more along the main branches and the wood is tougher also, so that they seldom break or require so much pruning.

ERRATA IN APRIL 18 ISSUE.

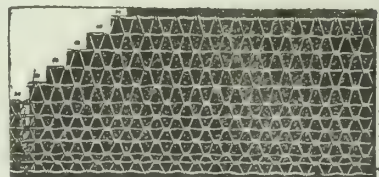
On page 467, "North of Los Angeles there are 278,500 bags of limas now on hand" should read, "278,500 bags of all kinds of beans are in warehouses of California aside from the Los Angeles district."

On page 479, "No grower in the California Fruit Exchange packs his own fruit" should read "California Fruit Growers' Exchange." The latter is the citrus organization and has only central packing houses. The former handles deciduous fruits which are packed by individual ranchers at the orchards.

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AGRICULTURAL REVIEW.

Fruit Organizations Active.

The California Green Fruit Association, a corporation to better green-fruit marketing conditions in the San Joaquin valley, recently elected James Madison, general manager of the California Associated Raisin Co., as president of the new association. It is stated that shippers of this new association will not affiliate in any way with the California Fruit Distributors, as they believe that Association is controlled too much by Eastern interests to make it possible for them to join it.

At a recent meeting of the Santa Rosa Cured Fruit Association, the reports of officers showed that, although the organization has only been established a year, much progress has been made in that time, including the building up of a fine market for the fruit and an increase in membership from 30 to over 65.

Within a short time it is expected that a permanent organization of a local branch of the California Cured Fruit Association will be effected in the Woodland section of Yolo county.

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There is one sure way to prevent this—

Use Salt

when you stack the hay.

The salt more than pays for itself in the weight of the hay. There is a further gain in weight through moisture held—and the stock will eat up salted hay clean where unsalted hay will be mussed over and wasted. 20 pounds of salt should be used to each ton of hay. Stack three feet of hay, sprinkle the salt over this by hand. Then another layer of hay, more salt, and so on.

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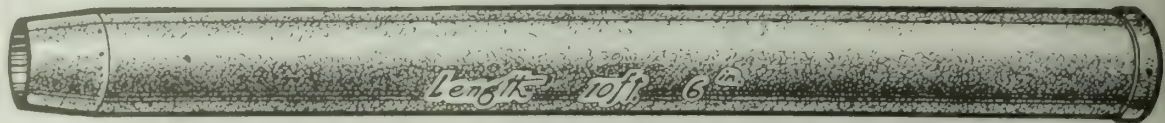
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Preliminary steps were recently taken when a number of prominent growers signed up, agreeing to become members.

Raisin News.

According to James Madison, manager of the California Associated Raisin Co., shipments of raisins last month amounted to about 4,000 tons. This reduces the hold-over to about 15,000 tons. Officials are highly elated over the shipments so far this year, believing there will be little or no hold-over crop. The Association has also reduced the price $\frac{1}{2}$ c per pound on a quantity of raisins that are slightly sugared, which will be sold for manufacturing purposes.

Fruit Prospects Changing.

Since our issue of April 18, we have received numerous communications from different parts of the State, which show that owing to unfavorable weather conditions, since our data for that issue were collected, many of the figures should be revised. This we will be pleased to do from time to time as fast as we can get such data from reliable sources.

Howard G. Kercheval, horticultural commissioner of Sacramento county, states that the following changes should be made in crop estimates for that county: Peaches, 90% instead of 100%; pears, 75 instead of 87%; prunes, 20 instead of 100%; and plums, 60 instead of 90%. He further states that strawberries and early cherries are being harvested and are giving heavy yields. Citrus fruits and grapes are blossoming well and give promise of setting well. Prunes have dropped heavily, due, it is thought, to the drought last season, while almonds bloomed so early that continual showers at that time did not permit of them setting well, and it is now estimated that the crop will be about 30%. The pear and plum yields for the county have been decreased somewhat by a heavy hailstorm which did some damage in the river pear belt during the last of March. The yield of first-cutting alfalfa was heavy, and the crop of grain hay will be heavy, as the season was most favorable.

Wm. Jas. Hill, of Shasta county, writes that the reports from a majority of the prune growers in that county shows that there will not be much more than 25% of a full crop instead of 100%, while the paper there states the prune crop will be a failure.

F. H. Babb, of San Jose, writes that his estimates of the fruit crop in the Santa Clara valley are as follows: Prunes, 50%; peaches, full; apricots 60 instead of 80%; and almonds much less than was given in

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our other account. The San Jose Mercury estimates the prune crop at 27,500 lbs. or 30% of a crop.

Citrus Happenings.

A peculiar thing is being noticed in the way that orange trees are blossoming in many parts of the State, a report from Oroville stating some trees are heavily laden with blossoms while the trees right next to them will scarcely have any. Another noticeable feature is that the greater number of blossoms are invariably on the north side of the trees. It is stated that the trees may not be as healthy as they should be, but authorities claim that they are at a loss to account for the peculiar behavior.

Reports from Redlands state that the navel crop in that section is about cleaned up and that there will be somewhat of a lull in shipping until valencias come in. With the shipping of 180 cars the past week, the total shipments from that place now amount to 2842 cars for the season. Prices are slightly better than they were, but it is doubtful if the average for the year will be much above \$1.25 per box. Shipments from Riverside the past week fell down to 122 cars, making a total for the season of 2242 cars, with a considerable amount of navels still to be shipped. The hot spell recently experienced in

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the Riverside section was anything but welcome, although the cool weather later is helping to hold back the crop.

Cherries Are Ripe.

Cherries are reported as being ripe in many sections of the State, including Vacaville, Winters, Healdsburg, and Sutter county. In the latter named place buyers are said to have been contracting at \$150 per ton for future delivery of Royal Anns. Chas. E. Virden, of the California Fruit Distributors, states that the first carload of cherries to be shipped East will probably leave Sacramento between April 27 and May 1. This will be somewhat earlier than last year, when the first carload started for the East May 4, that being an exceptionally early date. Various prices are reported as having been paid for the first shipments from the different sections, but with the starting of heavy shipments these prices will be materially lowered. A report from Santa Clara states that the commercial organizations of that city are making extensive preparations for the holding of the Cherry Carnival which will be held at that place between June 2 and June 6.

Vegetables.

Farmers in the vicinity of Oakdale, Stanislaus county, who are growing watermelons on a commercial scale, are planning on forming an associ-

ation for distributing this year's crop. The growers are said to be assured of a good market and wish to perfect an organization for their own protection and benefit.

Articles of incorporation were filed with the Secretary of State, last week, by a company of Japanese vegetable growers. It is their plan to operate a big vegetable market in Sacramento and make the institution a central selling agency for all the produce of their countrymen in that part of the State.

A. L. Ludlow, a farmer of Visalia, Tulare county, states that early potatoes can be grown in that section successfully, and backs up his statements by his experience this year, when he has been able to market early potatoes at extra fancy prices from his patch.

Apples Falling.

Apples are reported to be falling at an alarming rate in the Pajaro valley, and many growers figure that there will not be more than 50% of a full crop, the worst reports coming from sections that were badly hit by the frost last year. While such pessimistic reports are numerous, many seem to think that conditions are not so bad after all, and that the entire crop for the district will be in the neighborhood of 75%, while some maintain that it is still too early to predict with any degree of accuracy.

Almond Growers Organize.

A branch of the California Almond Growers' Association was recently organized at Oakdale, Stanislaus county, by almond growers of that section. A number of growers have already joined the Association, and it is thought that practically all of the growers will be enrolled in the near future.

A dispatch from Sacramento states that the annual meeting of the California Almond Growers' Exchange was recently held in that city and officers elected for the coming year. The exchange now has through its various local associations 530 members, which is an increase of 100 members over last year.

General Farm Items.

A county fair for both Yolo and Sonoma counties seems to be an assured fact at this time, as new boards of directors have been chosen who promise their respective counties much improvement over last year's fairs, which were in both instances surprisingly good considering the amount of preparatory work done. Reports from Woodland state that new stock barns will be built at that place for the accommodation of better displays of live stock than has heretofore been possible.

Seedsmen of San Felipe and Gilroy are complaining about the aphids which is reported to be doing considerable damage in that locality at the present time.

Articles of incorporation were filed last week at Oroville for the Frazer Hop Co., who propose to operate some of the holdings of the old Harry Frazer Hop Co., principally the Nord ranch, of almost 1,000 acres.

Yolo County Live Stock at Exposition.

It is interesting to note at this time that Yolo county is to take immediate steps toward the appropriation of \$2000 for a livestock exhibit at the Panama-

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REMOVES
BUNCHES or
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W. A. T. STRATTON,
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Pacific Exposition next year. This is in line with the article in this journal last week relative to what counties should do with a part of their appropriations, and it is to be hoped that other counties will also see the advisability of maintaining a live stock exhibit there at that time. It is likely that Sadie De Kol Burke and Riverside Sadie De Kol Burke will be among the animals shown from Yolo county.

THE SHORT PRUNE CROP.

(Continued From Page 524)

French prune, alone of all other varieties of fruit trees, has received no regular pruning.

Reports published as to crop prospects have spoken of the prune as "dropping after it had set"; this of course is wrong: the fruit had not "set," or it would not have dropped, unless from a heavy freeze, which did not occur.

Physiologically, if fruit does not "set" it has not been sufficiently pollenized. Growers (Blossom Day growers!) rejoice in myriads of blossoms. Cross-pollenization is necessary, all horticulturists admit, but there are not bees enough in the State to assist in this work in any one of the prune sections of California, as all other fruits are in bloom at the same time, and the bee does not concentrate its energy on any one variety.

If this is so, colonies of bees should be increased greatly. But if the older prune trees should bare even a small proportion of their blossoms additionally pollenized, they could not, in their

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Discounts: 250 doses, 10 p. ct.; 500 doses, 20 p. ct. Use any injector, but Cutter's simplest and strongest. Every package dated, unused pills exchangeable for fresh after date on package. Do not use old vaccine (ours or any other), as it affords less protection than fresh. Insist on Cutter's. If unobtainable, order direct. Send check or M. O., we pay charges and ship promptly. THE CUTTER LABORATORY, Berkeley, California.

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present condition, bear the crop.

Does not the domestica plum bear its fruit on two-year-old spurs? And cannot these two-year-old spurs only be maintained by annual shortening?

Does not all this belong to the primer, the A. B. C of practical horticulture?

What should be strong spurs are, on these old prune trees (and not properly "old"), long, pendant laterals, up to three or four feet, making now no annual growth, the buds opening, blossoming, and falling. For want of something better to say, we remark that such wood is not strong enough to bear fruit; the facts seem to bear out the supposition.

"Men say they know many things—Lo! they have taken wings; The arts and sciences, And a thousand appliances—The wind that blows Is all that anybody knows."

Morganhill. LEONARD COATES.

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The service is excellent
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is given to see the
metropolis of Southern
California, the great
orange district and
the scenic attractions.

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shade-grown trees. We have the larg-
est and best stock of seedlings as well
as a good stock of Navels, Valencia,
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Send in your orders; now is the time
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F. H. DISBROW, Prop.,
2141 E. Colorado St., Pasadena, Cal.

Constructive Agriculture—No. 17.

New Land in Our Midst.

[Written for the PACIFIC RURAL PRESS
by JOHN P. IRISH.]

The California Delta is almost un-
known to the great populations of the
cities around San Francisco bay,
though it lies all within a hundred
miles of them, accessible by a trip of
four hours. It is a region of leveed
islands, with berms lined with grace-
ful willows and lighted by many bril-
liant wild flowers. It has a net work
of bayous, in which may be seen the
picturesque shacks of fishermen and
bee keepers, for it yields tons of honey
from the golden rod, wild rose, grin-
delia, abutilon and willow bloom. Its
waters are full of the finest fish and in
it are stations where the neglected
shad, not liked by Californians, is dry-
salted for export to eastern Asia.

The reclamation of its lands has not
proved attractive to San Francisco cap-
ital, but the money and enterprise of
Los Angeles have leveed and reclaimed
one-ninth of its total area. It sup-
plies nearly all of our asparagus, cel-
ery, and onions, two-thirds of our po-
tatoes, half of our beans, and pro-
duces a large fraction of our seed peas
and carrot and onion seed, and is mak-
ing an impression on the market with
cucumbers and tomatoes. Its barley
and alfalfa crops are the heaviest in
the State, and its dairies give us a
daily supply of milk, cream, and but-
ter.

All of this reads as if farming in
the Delta of California had grown into
a definite scheme, as permanently ad-
justed as the "corn and hogs" industry
of the prairie states of the upper
Mississippi valley. But this is not so.
Farming in the Delta has so far
been a struggle to meet the heavy
charge of reclamation, for the levees
have cost from \$8,000 to \$15,000 per
mile, and laid evenly upon the acreage
have in some cases cost \$150 per acre.
The soil is a mixture of peat and sedi-
ment. The foundation under it all is
volcanic ash and material belched by
Mt. Diablo when its pillar of fire lit
the wide waters which covered the
whole region.

The story of the ages is writ in the
Delta, for here the clam shells of the
great dredgers lay upon the levees the
teeth of the Elphas Primogenius, the
great hairy mastodon, and with them
the arrow and spear heads of obsidian,
fashioned and used by the Indian
hunter. As you look over the Delta
you have before you a vast memorial
writing, with chapter superimposed up-
on chapter of the story of animal life,
long extinct.

The Delta farmer instinctively re-
sorts to the quickest cash crop that will
arrive before the maturity of his mort-
gage, and that has proved to be the
potato.

RECLAIMED BY LEVEES AND CANALS.—
After an island is leveed and pumped
off, it must be ditched and provided
with drainage. Around it, about fifty
feet from the inner toe of the levee
must be a deep seepage ditch, from
which lateral ditches run to the main
drainage canal, at the lower end of
which is a great centrifugal pump dis-
charging all surplus water into the
bayou or stream outside. When this
system is completed the buckskin, or
coarse peat on the surface, and the
"nigger head" or clumps of tule, must
be carefully burned off, and then the
land is ready for the plow.

LESSONS FROM WILD GRASSES.—The
Delta farmer must learn to look with
suspicion upon all wild grasses. One
tender green blade of grass will appear,
jewel pointed with a dew drop. It ap-
peals to your sentiment and you pass
on. Next time you come it has grown
into a tough and defiant tuft as big as
a half bushel and is leading a proces-
sion that seems composed of the whole
Gramma class. Under green banners
march tule, wire, foxtail, wild rye, and
that awful "devil" grass, a vegetable
octopus, with its rhizome roots, divid-
ing with Johnson grass the dishonors
as a field pest.

"To him, who in the love of Nature
Holds communion with her visible
forms,
She speaks a various language."

The skillful and observant Japanese
farmer looks upon the multiplication
of that little spear of grass and says:
"Fine barley land, one seed, many
stalks." And so it is.

The farmers of Judea must have
bragged about their grain crop or it
would not have been used in the par-
able of "The Sower" as giving in-
crease, "Some thirty, some sixty and
some an hundredfold."

But the usual stooling of the Delta
barley is 125 stalks to one seed, and a
count of the grains in the 125 heads
will show how far the Delta farmers
have the grain growers of Palestine
beaten.

ROTATION OF CROPS.—But barley is
used as a rotating crop to cleanse the
land for potatoes. The soil is rich in
organic matter. It produces great
crops of potatoes, but unless cleansed
by intervening crops that are not hosts
of the various Fusarium and other fun-
gus ailments of the potato, the crop
falls away to nothing.

The Delta Association has founded
at Middle river on lower Jones island,
one of the holdings of the Rindge Co.
an experiment farm, which if main-
tained as it should be by the Delta land
owners, will finally develop a system
of Delta farming that will get from
the soil all the value it should yield,
without impairment of its fertility.

This condition will come of a long
rotation, that will include grassing
with Australian rye grass and alsike
clover, used as forage for dairy and
beef stock. The natural plants, the
weeds, on the land in its primitive
state are remarkable for their com-
mon characteristic of a horizontal root
system lying just above the water
plane. Our Japanese farmers in the
Delta, in their own agriculture accus-
tomed to the breeding of plants to
adapt them to the soil, see a prob-
ability that alfalfa, suffering and dy-
ing when its tap root reaches the water
plane, will here throw out a lateral
root system which will subsist. This
seems to be supported by the behavior
of alfalfa on my own land, and it may
open the way to the inclusion of that
crop in a long rotation.

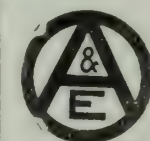
One clear light seems to shine on
the problem of Delta farming, and that
is the study of natural conditions for
suggestions.

I remember when it was held to be
an immovable fact that California
could not produce the small grains,
and we brought our flour from Chill.
But all the time Nature was sowing
her wild oats that grew to the withers

of a horse. So Nature seems to be
yelling herself black in the face all
the time to tell us what to do, but hav-
ing her visible forms before us, and
ears to hear we know not the varied
language in which she speaks.

There are certain things imperative-
ly necessary in operating islands in
the Delta. Irrigation is by siphons or
headgates, drawing water from the
bayou or channel and discharging it
into the seepage ditch, whence it flows
into the laterals. Transportation is
by water and every island is surround-
ed by a navigable channel. These con-
ditions make impossible the operation
of an island in small holdings, except
in a very few instances. Every owner
must have his shipping landing on the
levee. Otherwise he must haul his
crop through his neighbors' land to a
landing that belongs to another. The
land owners in the interior of an is-
land may have crops that require ir-
rigation, but they do not front on the
levee, and must use the siphons of
others and run the water through
crops that it will destroy. Nor can
small subdivisions support the long
system of rotations required by the
physical peculiarities of the soil.

When the Delta is as near to an
equal population, as the polders of Hol-
land are to the consumers of London,
Paris, and Berlin, it will have the same
value of \$1000 per acre. Even now, it
is an economic necessity to California
and the coast. It reclaimers have gone
forth to uncertain battle with the ele-
ments, with their fortunes risked. In
the floods they have survived tragedies
and known but little sympathy. But
little by little they are feeling the cen-
tripetal force of a common interest.
They are getting together, resolved to
solve their peculiar problems and make
Delta farming as profitable as its
theatre is instructive and interesting.



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ceipt of prices quoted:
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Trees of California, Jepson..... 2.50
Asparagus Culture, Hexamer..... .50

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PACIFIC RURAL PRESS,
420 Market St., San Francisco.

Veterinary Questions.

[Answered by Dr. E. J. CREELY of San Francisco Veterinary College.]

TREATING HEAVES.

To the Editor: I have a valuable horse, which I have always taken the best of care, and fed number one hay. He has contracted the heaves. Is there any cure for the heaves, and what can be done for him?—W. E. G., Yuba.

The "heaves" can be cured by turning the animal on green grass, but will return if the same cause is repeated viz. moldy, musty, smutty, or dusty hay which is the usual cause. Fowler's solution of Arsenic $\frac{1}{2}$ oz. daily 1st week, $\frac{3}{4}$ oz. daily 2nd week, 1 ounce daily 3rd week, is the treatment that is considered the best also taking care to feed moist food entirely and small in amount.

COLT CANNOT STAND.

To the Editor: Have mare with a mule colt. When five days old mare was over-heated, three days later the colt would stagger, and fall, later it could not get up, hind parts and legs very swollen. Seems better at times. Other times has weak spells. Appetite good.—C. W. G., Pine Grove.

Congenital troubles of the circulatory system of the posterior extremity. Stimulate circulation by friction and arrange so it cannot injure itself by falling. The colt will probably recover, unless the parts become gangrenous through circulatory insufficiency.

SORE NAVEL.

To the Editor: I have a six-year-old horse, which has a sore navel, has been so for four or five months, does not seem to hurt him any, but will not heal; does not bleed nor discharge pus. Kindly advise me what to do.—F. E. H., Half Moon Bay.

Apply the following mixture once daily: Tincture Iodine, 4 ounces; Ly-sol, 2 ounces; Tincture Benzoin, 2 drachms; Oil Cinnamon, 1 drachm.

SPLINT BLISTER.

To the Editor: I have a young mare which I use to ride and drive and she has developed splints on the inside of both front legs and a hump that looks to be the same on the outside of one front leg. They are all just below the knee and do not seem to cause any lameness, but I do not like the looks of them and as the mare is nearly five years old, I fear they will not go away of their own accord.

I saw a remedy printed in the PRESS not a year ago, but I did not need it then and it did not stick to my mind any better than the whitewash receipt does to the memory of some of the other subscribers.

Is a horse that drives in a rig with-

out breathing thick, but makes a sobbing noise when run uphill or used hard under the saddle classed as thick winded? And what is the best way to test a horse's wind?—C. A. B., Guerneville.

Apply the following blister and repeat in six weeks. It would be better to use the actual cautery if possible: Simple Cerate, 4 ounces; Red Iodide Mercury, $\frac{1}{2}$ ounce; Canthorides, $\frac{1}{2}$ ounce.

Mix and apply after first clipping the hair.

Test a horse's wind by a brisk run up a hill and stand where you can hear the breathing the instant he stops.

MORRIS HOLSTEINS DOING WELL.

[Written for the PACIFIC RURAL PRESS.]

Production is a word that every progressive dairyman is now very much interested in, on account of the low price of butter and in this respect a recent communication to this paper, from the A. W. Morris and Son Corporation, may be of interest as it shows beyond a doubt that the well bred animal must be a propelling influence behind higher production.

It says that the herd on their ranch contains the first 28,000 pound cow in the world, and two of the only five cows that have exceeded 28,000 pounds of milk in yearly semi-official test. It also contains the only two cows in the world that have exceeded 50,000 pounds in two consecutive years.

Four cows have exceeded 1000 pounds of butter, and fifteen have exceeded 875 pounds and 20,000 pounds milk in yearly test.

Fifty cows, including but fifteen at mature age, average 717 pounds butter.

The herd now contains 127 head of Aro cows, all of which average over 20 pounds of butter in seven days, including a large per cent of heifers with first calf.

Eight cows have records greater than 30 pounds butter in seven days.

It might also be noted that this herd is being recognized by all of the larger Holstein breeders in the east and Mr. Morris states that numerous inquiries are being received from the east for young bulls. This indicates that yearly records are the thing that attracts the most attention as this company has gone in strong for the long-time test.

BUTCHERS' "WEIGHING CONDITION."

To the Editor: I sold two 250-lb. calves to our butcher, and the weight he returned was about 60 lbs. less than they weighed here. As they rode only $3\frac{1}{2}$ miles, and that in a spring wagon, I knew they could not have lost \$4 worth of weight in that distance, so I asked about it. He said it was not fair to him to get them full of grass, and that they should be "gaunted." He says that when cattle and hogs are shipped to the San Francisco market that they are not fed or watered the night before they arrive or the day they are weighed, so that when weighed they are entirely empty. Will you kindly tell me if that is correct and is the accepted custom. I have read that shippers send a man along in the car to feed and water so that the weight is kept up, in shipping

to the Chicago market.—A. W. C., Lake county.

[It is the practice of all buyers to hold cattle, as your butcher says, about 24 hours before they are weighed, without feed or water, although we doubt whether it is a common practice with country butchers. If this were not done, the sellers would very often fill the stock up with water and feed during the last 24 hours, with a resultant loss to the buyer when butchered.—J. C. L.]

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2 $\frac{1}{2}$ c per word.

SWINE.

REG. POLAND-CHINA PIGS for sale from our prize-winning stock—the prolific kind. Both LARGE AND MEDIUM TYPE. Either sex. Price \$12.50 up. Guaranteed as represented or money refunded. W. A. Young, Lodi, Cal.

REGISTERED BERKSHIRE BOARS FOR SALE—Excellent individuals of the best breeding; good feet and plenty of bone; ready for use; farmers' prices; mail orders guaranteed satisfactory. A. H. Brinton, Woodland.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

THOROUGHbred JERSEY-DUROC HOGS—Most prolific, hardiest and safest hogs to breed. D. R. Price, Ellsworth, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal. A. B. Humphrey, Prop.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. \$30 p. M. Bassett, Hanford.

DUROCS from first-prize winners State Fair, \$15.00 up. Ed E. Johnson, Turlock, Cal.

REGISTERED O. I. C. SWINE—All from premium stock. C. D. Conway, Lakeport, Cal.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Heary, Farmington.

DUROC-JERSEY BOARS—Weanlings. Lindquist-Bros., Turlock, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS—Gay Lad 6th head herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 1 Modesto, Cal.

AYRSHIRE—THE PERFECT COW—Steybrae Ayrshires. Have for sale fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, address E. B. McFarland, San Mateo.

REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823-Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

FOR SALE—A pure-bred Holstein bull calf, five months old, evenly marked; from an eight gallon cow; price \$50. A. Buschke, Tracy, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

FOR SALE—50 very high-bred grade Holstein heifers, from 18 to 24 months old; all bred to purbred sire. E. J. WELDON, Box 962, Sacramento.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

TWO REGISTERED HOLSTEIN YEARLING HEIFERS for sale, from good A. R. O. dams. K. W. Abbott, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. G. McFarland, Route 2, Tulare, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

MISCELLANEOUS.

FOR SALE—30 head of coming four-year-old mules, also 80 head of yearling Shropshire bucks. Inquire of J. K. Bloom, Dixon, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

REGISTERED JACKS

12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

JAS. W. McCORD, Hanford, Cal.
Residence, 508 N. Douty St.
Phone 471-J.

Shorts and Barley for Pork.

To the Editor: My statement in a recent number of your paper, that it is not advisable to feed shorts alone, was given for the following reasons: The quality of shorts, commonly called middlings, varies enormously. Sometimes it is possible to get such a feed that is free from sweepings and does not contain much bran. This is quite desirable for pig feeding, but should be fed with corn, barley, or some similar feed. The shorts are low in lime, and should therefore be used with some other feed which is high in this in order to provide sufficient bone-forming material. They are high in flour and are heavy and pasty and are much more liable to cause indigestion than when fed with equal parts of ground or rolled barley.

In a feeding experiment conducted by Shaw comparing wheat shorts with corn meal when fed alone and with skim milk the following results were obtained. It required 780 pounds of wheat shorts alone to produce 100 pounds gain on pigs where only 591 pounds of corn were required. It also required 412 pounds of shorts and 1647 pounds of skim milk to produce 100 pounds gain while only 255 pounds of corn and 1019 pounds of skim milk were necessary to produce the same amount of pork. Shorts or middlings also are inclined to produce a soft pork when liberally fed alone.

I do not know why barley is not used where it can be obtained provided it does not cost as much or more than shorts. The price quoted for shorts is \$1.20 per 80 pounds or \$1.50 per 100 pounds, and barley here can be purchased for \$1.30 per hundred or less, so it is much more economical to use one pound of barley for each pound of shorts. The less shorts that can be used for fattening, the better. If your correspondent can secure barley for the same price per hundred as shorts or less, I would suggest that he try a ration made up of half of each of these by weight and determine for himself whether it is advisable and economical. It certainly would not be advisable to use corn at \$2.25 per hundred pounds in comparison with barley and shorts at the above mentioned prices.

J. I. THOMPSON.

University Farm, Davis.

JERSEYS COMPLETE TEST.

In a communication to this office, D. F. Conant, of Modesto, writes that four of his registered Jerseys have just completed yearly official records, their names and records being, Foxy Hecla 260344, fat 452 pounds with second calf; Mamie Owl 261075, fat 435 with first calf; Pansy's Lily 260339, fat 537 with second calf; and Foxy Mary Smith 260351, who produced 389 pounds of fat with second calf.

Considering that these are all young animals and that they received only ordinary herd care, with no special housing facilities, the owner has good reason to feel proud of this bunch and should be able with such a foundation to build up a herd of high producing Jerseys.

CLEAN MILK RECORDS.

[Written for the PACIFIC RURAL PRESS.]

Dairymen who weigh their milk usually find that the milk record sheet becomes badly soiled before the month is finished, on account of dirty hands and flies. Where a pencil is used for

marking the daily amount, the figures very often become so badly blurred that one cannot decipher them, and for that reason a dairyman recently visited, had figured out a novel way of overcoming this objection.

This was done by tacking the record sheet onto a board, so as to be kept in place. Over this a piece of cheese-cloth is hung, which is dampened before each milking. Hanging directly over the sheet as it does, the milker is compelled to pull it to one side in order to mark down the weights and is thus reminded to wipe his hands, and therefore the sheet is kept clean. The cloth also protects the sheet from flies, which would otherwise light upon the paper.

SILAGE AND ALFALFA FOR RANGE CATTLE.

(Continued From Page 517)

Plans are now being made to overcome this objection next year by laying a concrete or wooden floor six or eight feet wide along the feeding troughs and afford better drainage facilities for the corrals, as it was found this year that dry quarters for the stock to rest on are very important.

This was demonstrated after one big rain when the corrals were deep with mud and water. As soon as the rain was over, teams were sent into them and part of the land was plowed. The soil under the mud was dry and hard, and the cattle soon showed they appreciated a dry place to rest after feeding by stretching out on the dry plowed land before the teams were out of the lot. But they did not hesitate to stand in the mud for short intervals to eat.

The mud also interfered with the hogs which followed the cattle, for they too require a dry place to lie down.

For the feed to bring the most efficient results, methods of feeding and care are not alone to be responsible for the success of the undertaking. It is realized that the well bred steer has a much better chance of showing a profit than the kind of stuff handled this year, and for that reason 60 Hereford bulls were purchased from O. Harris & Son, of Harris, Missouri, and are being turned out with the range cows this year.

According to the present plans the breeding stock will be wintered on the valley ranch and taken back to the mountains in the spring, as they were this year. This will insure better results in breeding and in the condition of the stock when the grass starts to grow in the spring.

HOGS IN THE SCHEME.—Hogs will also enter the general scheme of things, for they can be successfully bred and started on their growth in the mountains on wild feed, and afterward brought down with the cattle, where they rapidly take on weight in the corrals. By a little graining after the feeding in corrals, they are in prime condition for the market, four carloads having been turned off in this manner the past season.

TURN FARM CROPS INTO MEAT.—Like all cattlemen, Mr. Hill does not believe in farming, unless the crop can be sold as meat. For that reason, half of the valley ranch will be seeded to alfalfa and the balance used for

You Need a New DE LAVAL CREAM SEPARATOR NOW

1st If you are still using some gravity or setting process of creaming—

BECAUSE your cows have likely freshened now and your supply of milk is greatest.

BECAUSE your spring work requires every minute of your time and a good cream separator will be a great time and labor saver.

BECAUSE your young calves will thrive best with warm, sweet separator skim-milk.

BECAUSE with your increased flow of milk your greater waste of cream, without a good cream separator, must run into more money than you can afford to lose.

2nd If you have a very old De Laval or an inferior separator of any other kind whether new or old—

BECAUSE the losses of the poor separator from incomplete skimming, and the tainted product of the hard-to-clean and unsanitary separator mean most when your volume of milk is the greatest.

BECAUSE of the ample and "more than advertised" capacity of the De Laval, with which you can separate more quickly and save time, when time means most to you.

BECAUSE an improved De Laval Cream Separator is so much simpler and more easily handled and cared for than any other, and you can't afford to waste time these busy days fussing with an inferior or half worn-out machine.

BECAUSE the De Laval Separator of today is just as superior to other separators as other separators are to gravity setting.



These are all facts a De Laval catalog, to be had for the asking, helps to make plain, and that every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

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corn, later to be put through the silo. This will require the erection of more silos, which will follow as soon as required.

"How many silos?" we asked.

"That's one of the things that will come up for decision later, but there will be enough to enable us to finish 1500 to 2000 steers each year," replied our guide, for the reader should know

that without a guide a trip of inspection to this ranch would be almost useless. And the one man who can act best in that capacity is Roland G. Hill, for it is he who has done the

planning and superintended the execution of everything from the digging of post-holes to the erection of the most up-to-the-minute feeding plant in California.

With the Live Stock Men.

Considerable interest is being manifested by dairymen of Kings county in a proposed dried-milk plant which may be established at an early date near Lemoore.

The Adams McGill Co., of Elko, Nevada, has installed an equipment of 16 sheep-shearing machines which are proving very satisfactory at their

shearing pens near McGill. It is possible with this equipment to shear about 1600 head per day.

A report from Washington states that a bill to provide for the opening of homestead entries on stock-raising lands was favorably reported in the House by the Public Lands Committee. It provides that land not subject to irrigation may be taken up.

Authorities claim that beef production in both hemispheres and Europe is being ravaged by foot-and-mouth disease, a quarantine in the case of Ireland having been necessary recently, while decimation of the 1913 calf crop in Argentina has made serious inroads into future supply. Loss of calves in Argentina is estimated at close to a million head, and graziers in that country are looking around for stock cattle to replenish vacant grass areas.

The old cheese factory at Woodbridge, San Joaquin county, is to be opened by Hartje and Thiesen, of that place, who will conduct the business on a commercial scale.

The Mendocino Beacon says that the L. E. White Co., of Point Arena, has imported a herd of Hereford cattle during the past few months.

A dispatch from Porterville states that a number of swine growers of that section are planning on forming an association the purpose of which will be the fighting of hog cholera.

The Corcoran creamery manufactured nearly a ton of butter one day this month, which was a record-breaker for that plant.

Malcolm H. Gardner, of Delevan, Wisconsin, writes that the Holstein-Friesian cow Finderne Holingen Fayne 144551, has broken the record for fat production in the junior three-year class of the seven-day division, by producing 28.96 lbs. of fat from 607.9 lbs. of milk.

Cattle receipts at the Portland Union Stock Yards were fairly heavy last week, the bulk of light steers selling at \$7.75 to \$8, heavy bullocks at \$7.50 to \$7.75, with a strong demand for dehorned heifers and cows. The hog market was a shade weaker, but partly recovered toward the close of the week, the bulk of best light hogs going at \$8.50 to \$8.65. There is a good supply of feeders in the country, but growers are having some difficulty in getting their holdings ready for the market, as feed is scarce. Sheephouse receipts were light, lambs selling up to \$6.75, best wool wethers featuring at \$5.75 to \$6, and few ewe sales being made.

A. Stornetta, of Point Arena, has recently imported a 23-months-old brown Swiss bull from Illinois which he will use on his grade dairy cows.

Nathan Straus, who is visiting California at the present time, states that he will remain here long enough to start a campaign against bovine tuberculosis, similar to the one that he

GEO. A. SMITH'S

FIRST SALE OF REGISTERED HOLSTEINS, JUNE 16, 1914.

will give those who wish to start a Registered Herd an opportunity that comes but once in a lifetime to start right with stock for a foundation that is IMPORTED DIRECTLY FROM THE EAST and selected from the BEST FAMILIES of the BREED, and backed up by LARGE OFFICIAL RECORDS.

A well bred young Bull and a few fine Heifers from the East would certainly give you a start that you would be proud to own.

How about those scrubs you own?

Will they pay at the present price of butter-fat? Of course, you expect to work into Registered Stock sometime. Smith's Sale will be a good chance to get some good stock. A few young heifers will not cost much, and in a year they will be cows, worth more than double what you paid for them.

The Catalogue will tell you all about them. Better write for one without delay.

GEO. A. SMITH, Corcoran, Cal.

Star Barn Equipment

STALLS, STANCHIONS, AND LITTER CARRIERS

You will find many patented features on STAR LITTER and FEED CARRIERS—features that are practical and exclusive with us.

No matter what your arrangement of stalls and gutters, the "STAR" is practical for use in your barn. Patented curves and switches make the STAR universally usable. Raises easily—lowers in a jiffy. Every moving part ball bearing.

Manufactured in both rod and rigid track types—in 6 different styles. Automatic dumping and returning device.

Handsome—substantially constructed—free from useless parts. Least repair expense—and most satisfactory carrier made.

The Swinging Boom keeps your barnyard clear of obstructing posts.

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ANIMALS MADE WELL

Drop a line to Dr. Korinek today and ask for his FREE list of remedies—if you have a sick animal on the place now write at once for FREE advice.

Dr. C. J. Korinek is a graduate of Ontario Veterinary College of the University of Toronto. He has practiced over 12 years, has been Oregon State Veterinarian under two governors and served four years as president of the Oregon State Veterinary Board.

Dr. Korinek is a Veterinarian of National Reputation

The FREE Consultation Department of Dr. Korinek's is doing a great good for farmers all over the Pacific Coast. He answers by personal letter all inquiries regarding sick animals absolutely free of any cost.

Write for literature. Free sample of Dr. Korinek's Gail Powder upon request.

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Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

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Woodland, Cal.

C. F. WIELAND, 203 Market St., San Francisco.

designed and erected, CONCRETE SILOS, some with water tanks, on ranches of Central Creamery, Oakley; Tisdale Ranch Co., Grand Island; C. E. Childs, Merced; Lone Tree Dairy Co., Merced; Meadow Brook Farm, Merced; Melone Co., Napa; Tehachapi Cattle Co., Bakersfield; and others. Write for information.

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Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.

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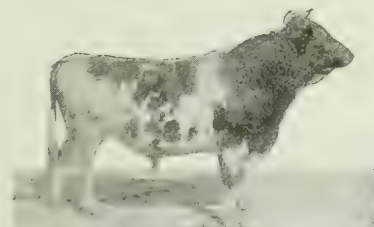
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BERKSHIRES—GUERNSEYS

Our BERKSHIRES are the finest in the State. At the last State Fair we entered in fourteen classes and won ten firsts.

Stock of all ages for sale. GUERNSEYS—we offer for sale bull calves of A. R. breeding on both sides. Some by Don Adonis of Linda Vista, whose dam, two grand dams, and two great grand dams have an average record of 714 pounds butter-fat in one year.

GRAPEWILD FARM,
A. B. HUMPHRY, Owner,
Mayhews, Cal.



Don Adonis of Linda Vista.

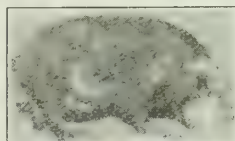
Rose Crest Berkshires

Nine fall boars of good quality and of the best of breeding. Sired by Rookwood Baron by Rivals Champions Best.

Orders now booked for spring pigs and sows bred for fall farrow.

L. S. HALL,

Rose Crest, Perris, Cal.



MODESTO KING. 177719

REG. DUROC-JERSEY SWINE.

FINEST IN THE WEST.

Four First Prizes at State Fair, 1912.

Herd boar Modesto King, out of Colorado King and Helen Blazes V.

Stock for immediate delivery.

JNO. P. DAGGS, Modesto, Cal.

successfully carried out in New York.

The National Wool Warehouse & Storage Co., of Chicago, has recently issued a statement to the effect that there is a serious decrease in the number of sheep being raised in the principal sheep States. The decrease by States is as follows: Montana, about 40%; Wyoming, about 20; Idaho, about 10; Utah, about 15; and Oregon about 10%. It is estimated that there will be a decrease of about 25,000,000 lbs. in the 1914 clip.

T. B. Roy, of San Geronimo, Marin county, was a visitor to this office this week. He states that for a time feed prospects in that section were most discouraging, but that recent rains have caused a big improvement. He also says that his herd of registered Jerseys are doing nicely and that he is now making over 70 lbs. of butter daily from the 52 head being milked, a number of which are heifers with their first calves.

Dairying is to be encouraged in the

Exeter section of Tulare county as a community proposition by the formation of a creamery company at that place, which will be turned over to the dairymen in the form of a co-operative proposition as soon as they are in a position to handle it.

Ralph Watson, manager of the Rancho Dos Rios herd of registered Jerseys, reports that they are entirely sold out of breeding stock for the present.

E. P. Ellison reports that the Ellison Ranching Co., of Valmy, Nevada, has a force of 30 shearers handling the company's flocks at that place, but that slow progress is being made with the shearing on account of frequent showers.

Jacob Spuhler, of Porterville, has just left for Texas, along with several other cattlemen from that section, who expect to purchase several hundred head of beef cattle for importation into this State.

Types of Silos.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

In an endeavor to improve upon the quality of silage, manufacturers and builders have given us a large variety of types to select from; and in some States this selection is so large, that the farmer may become confused as to which is the one best suited to his conditions. In California, however, there are as yet only a few distinct types that have been put in use, namely: the wooden stave silo, the resaw and studded silo, the reinforced concrete silo, and the cement block silo.

THE STAVE TYPE.—Throughout the east, this type has been considered the most practical for the dairyman of moderate means, as it could be easily and cheaply constructed and also had an advantage over other types inasmuch as it may be taken down and moved without damaging it in any way. This is a big factor, especially with the tenant who could not afford to erect any of the other types, when such an investment would necessarily have to be left on the land when his lease expired.

In California we find that some of the oldest silos are made of staves; and while the first ones built have not always proved satisfactory, it has been found that the principle is right; and later day manufacturers are now turning out silos of this kind which are standing our climate successfully.

The newer kinds are made of clear 2x6 tongue-and-grooved redwood lumber, set perpendicularly like the staves in a barrel, with each edge beveled to conform with the circumference of the silo. Iron hoops are placed around them at regular distances, the principle being that when the silo is full the wood swells and tightens up, making an air-tight enclosure. The hoops are made so they may be tightened, flat iron slugs being placed at intervals around the silo, and the hoops are made of two or more pieces instead of being continuous. Where it is necessary to make a joint in the stave an iron spline is inserted into the end of each board which makes the joint airtight and holds the staves in line.

The door system of this type is made with panels which also have beveled edges, a locking bar on the outside being used to keep the door in a tight position, until removed. These doors are interchangeable and are placed six inches apart so that it is not necessary to lift the silage any distance when feeding.

After erecting, the inside is painted with a petroleum paint that keeps the acids contained in the silage from rotting the wood. The outside should also receive a coat of good barn paint to protect it from the weather.

Unsatisfactory results in the past with stave silos, has been largely due to the kind of lumber used, especially to the lack of tongue-and-grooves. This caused knots or other defects in the lumber to drop out when the silo was left empty for any time. With no tongue or groove, the staves warped, either in or out, and in this way allowed air to penetrate the silage. These factors seem to have been overcome in the newer models and it is expected that more of them will be used in the future.

RESAW AND STUDDED SILO.—This type has received more consideration on the part of builders than most others in the past; and in some localities such

silos have demonstrated their worth through many years of service, especially in sections where extremely warm weather is not a factor. In Sonoma county they have been in use a great many years.

As the name implies these are built of 2x4 studding, set perpendicular on 12-inch centers, to the required height of the silo, experience seeming to show that less loss is experienced with the greater heights.

After the studding is in place a course of redwood resaw is nailed on to the inside of the studding, a labor saving way being to start it on an angle so that it winds its way up the side, like a cork screw, thus doing away with the making of so many joints as would be necessary if the resaw were run straight around. The first course of resaw is covered inside with heavy tarred roofing paper, and then by another course of resaw, care being taken that the cracks of the first and second courses do not parallel one another. This makes practically an airtight wall, the chief fault found being, that in the warm climate of our interior valleys, the resaw exposed to the weather is apt to check and split, where flaws such as knots are found in the lumber.

Doors for this type are usually made by cutting out panels in the wall, about 2 feet apart. These are fitted from the inside, the pressure of the silage holding them in place.

REINFORCED CONCRETE.—Except for their cost, it seems probable that this type would come into more general use. Where they are erected by experienced men, leakage troubles are not often encountered and they are not affected by climatic conditions such as we have in this State.

USING STEEL FORMS.—A large part of the expense of this kind is due to the cost of lumber for forms and of labor in building them, and without the aid of patent steel forms, such as are used by silo contractors, the work is difficult. These patent forms are made of sheet iron, of about four foot widths. A steel shaft in the center of the silo acts as a brace to hold the forms in position, being tied to the forms on all sides by steel rods. This allows the operator to move the forms up after each course of cement has been poured and insures a good neat job.

Spiral rods are used for reinforcement, being run both perpendicularly and horizontally through the wall, to insure sound construction. Where one has some knowledge of concrete work this type usually proves to be absolutely air tight and those where leakage is seen are, as a rule, the result of poor workmanship. As with other concrete construction, these silos when once built are good for an indefinite period and are in the long run, more economical than either of those before mentioned if properly constructed.

CEMENT BLOCK TYPE.—These silos, like the reinforced cement kind, are not so numerous as the wooden ones, owing to a larger initial expense, but they also have the redeeming feature of being substantial and satisfactory for an unknown period of time.

FORMS UNNECESSARY IN ERECTION.—Instead of using large circular forms, small oblong-shaped forms are used in making these silos, the cement being formed into a concrete block. These blocks are solid with a slightly curved side to conform with the shape of the

silo when in place. Grooves are left on all edges of each block, leaving a space for mortar and reinforcing rods, when set in place. This makes a complete reinforcement around each block, from top to bottom, at an even distance from both sides, a task which is said to be more difficult when the cement is poured into forms.

An advantage that is ascribed to this type, is that by renting the forms, the farmer can make his own blocks and that the walls are put up at less expense.

ROOFS.—Many silo owners do not go to the trouble or expense of adding a roof, on account of our mild climate, but when it is desired, the silo may be either shingled or covered with corrugated iron. The added cost is perhaps warranted as it is very small and the results somewhat better.

THE CHUTE.—The chute most popularly used, is one made of lumber, being box-like in shape and running from within a few feet of the bottom, to the top of the silo, in front of the windows. Many do not go to the expense of adding these but they save silage, as otherwise much of it is scattered in being thrown out of the top windows.

A handy and sanitary chute, recently put into use, is one made of galvanized iron. The top is square shaped, an opening being left on one side which is put next to the window. From this square end the iron is gradually reduced to a round pipe, of the same diameter as the blower pipe used in filling. This enables one to hook on the blower pipe joints. As the silo is emptied the spout is lowered from one window to another, and a joint of the pipe taken off at the bottom. A rope and pulley are used to hold this chute in place, the pulley being hung from the top of the silo. This appliance seems to be a big improvement over the wooden ones and will very likely replace the others in the future, as it is economical and easily kept clean.

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LARGE TYPE

YOUNG STOCK FOR SALE. BOTH SEXES.

THE BROWNING STOCK FARM.

W. H. Browning, Prop.

Woodland, Cal.

The Silo Foundation.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

As no structure can last longer than its foundation, it is apparent that in silo construction the builder should realize that a permanent foundation is necessary; and for this purpose concrete will in most instances be more economical than other materials in this State.

Before excavation is started one should decide upon the natural location for it, as the labor in feeding silage is the greatest expense; and for that reason it is advisable to locate the silo near the feeding troughs, or other place where the animals are to be fed.

well to have the outside edge of the top of the foundation slope slightly to the ground that any water may be drained from the sides of the silo, while for the inside of the top of the foundation it is advisable to leave the top with a rough surface in order that the cement rim may adhere better inside after the silo has been erected.

Although the silage will be as well preserved on a ground floor as cement, it is advisable to put a thin layer of the latter on the bottom, as the silage is easier to remove from the cement surface than from the ground, and also eliminates any loss from mice or rats.

The cost of the foundation depends

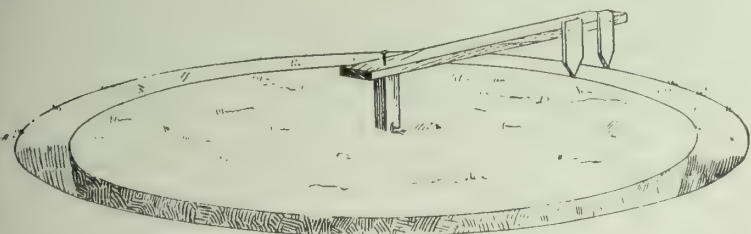


Fig. 1.

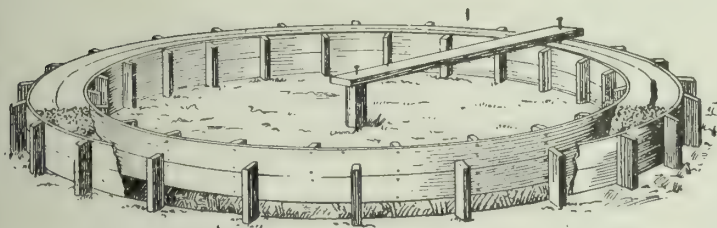


Fig. 2.

After the right location is decided, the foundation should be laid off by some kind of a marker, a good way being shown in Figure 1, which may be easily made as follows: Drive a stake where the centre of the silo should be; then drive a nail through a measure to which two markers are attached. With these the inside and outside measurements of the foundation may be found. For a 14-foot silo, the foundation may be about 12 inches thick and the outside measurement 15 feet in diameter so that the silo will rest centerly on the foundation. The thickness of the foundation depends upon the size of the silo and of the material which is to be used in its structure, the ordinary thickness being from 12 to 18 inches.

After the size is marked off as above, the trench should be dug, care being taken to see that it conforms with the marking, and also that it is well underdrained. Some prefer to extend the foundation several feet below the ground and in this way make a pit which is a continuation of the silo when completed, but in doing this care should be exercised; for where these pits are dug in ground that is wet or apt to be excessively wet, it is impossible to cement out the moisture and as a result the silage in that part of the silo may be spoiled.

Whether a pit is wanted or not, forms may be made by using resaw lumber as shown in Figure 2. Coarse gravel or rock may be used in the lower part of the foundation and finished with concrete, if that material is decided upon. It is advisable to extend the foundation at least a foot above the level of the ground, especially where lumber is to be used in construction; as in that way the lumber is protected from barnyard litter or other unnatural moisture. It is

entirely upon the size and upon the labor and materials, many finding it possible to construct one for \$12 to \$15 where the work is done by ordinary farm labor.

A PORTABLE SILO.

[Written for the PACIFIC RURAL PRESS.]

The silo which we have pictured on the front page of this issue is located on the Newman Brothers' ranch, near Elk Grove, Sacramento county and has somewhat of a history which may be of interest.

As will be seen, it is of the stave type, having been purchased at the State Fair last year from the De Laval Dairy Supply Co., who had it on display at that time for the instruction of visitors who were interested in silos.

After the fair, Mr. Newman had the silo taken down and hauled to his ranch, some 14 miles from the fair grounds, and erected in its present location. As no nails are required in the erection of these silos it was in no way damaged through taking down or putting up. Before that time no plans had been made for a silage crop, so it stood empty all winter, but corn is being planted this spring which will be used next fall for filling the silo.

In the meantime the silo has been filled with the first cutting alfalfa from a part of the ranch, and the economy of this practice seems to be most pronounced, for instead of curing the crop and making a very mediocre quality of hay, the first cutting from 10 acres was run through a silage cutter directly into the silo, which holds 83 tons. Strange as it may seem, the crop from this 10 acres was all that was necessary to fill the silo, which is of course a far larger tonnage than could be secured if it

had been made into hay, and also a far greater tonnage than is ordinary—due to the fact that there was a generous amount of weeds and volunteer grain all through the hay. This would have made very poor hay but does not make any notable difference in the quality of the silage, except that in such condition the weeds are turned into good feed.

In soiling the crop some water was turned into the cutter from a hose, as a part had become somewhat dry, the water being added to insure ample moisture. Salt was also added in the belief that the silage would be more appetizing and also for the reason that the salt ordinarily required

by the cattle could be fed easily in this way.

It is planned to feed this silage in feed troughs in the corral, for as we shall show in a later article, it is necessary for Mr. Newman to keep out from the milking barn and also from the feeding barn, all foul odors which would in any way be apt to contaminate the milk.

If this silo proves successful, and there is every reason to suppose it will, another will be added later; as it is believed that the principle of silage will be one of the chief factors in making rotation of crops and a better balanced ration of alfalfa possible, in this State.—J. C. L.

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Corcoran, Jan. 7, 1914.

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Dear Sir: I consider my Hinman investment one of the best I have ever made

Yours truly,
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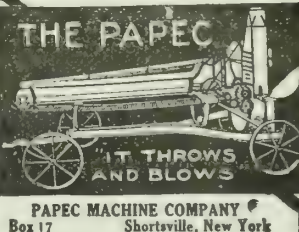
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is easy to set up and take down. Simple in construction, not easy to get out of order. The entire frame is one solid piece of semi-steel. The bearings are always in line, run smoothly and will not heat. The feeding mechanism is geared to the main shaft—always gives you the desired length of cut. The *Papec Ensilage Cutter* is not chain driven, but has heavy gears which transmit all the power. It cuts ensilage perfectly and swiftly—as fast as you can bring the corn to the machine.

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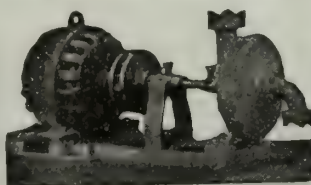
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Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

Broilers and Fryers.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

Broilers are plump, young chickens, of either sex, weighing, when dressed, from three quarters of a pound to two pounds, the latter weight being most in demand. These are usually killed at eight to twelve weeks of age. Squab broilers, so called, are Leghorn chickens that are killed at about the three quarter pound weight. In the eastern markets the yellow legged varieties are the most popular; while on this coast, Wyandottes and Orpingtons are first choice. Though strictly speaking, breed or color of legs are not so important as quality of flesh; if that is good, all else goes for very little except when displayed for sale on the market. The Leghorns make very good squab broilers in early winter because they grow fast and can be confined to the house without much trouble.

RESTAURANT PROFITS.—Half a chicken is a serving in a restaurant. So if the caterer pays 30 cents a pound for a broiler weighing one and a half pounds and cooks half that for a customer and charges 75 cents for the meal, he is making money at a good rate of interest for his labor. A short time ago a lady who has traveled around a good deal as a solicitor of poultry foods told me that broilers would be one dollar a pound next year. Of course, it was merely her personal opinion, and we have to make allowance for enthusiasm, but I believe that with the great influx of visitors next year the demand for such delicacies as broilers will run prices up to where there is a profit. But I for one would not like to see them go up to a dollar a pound. That would look too much like imposition on our guests and no Californian wants to impose on the stranger "within our gates."

KEEP YOUNG BIRDS GROWING.—In raising broilers the main point is to keep them growing and in good condition. It is hardly possible to make them very fat, but they must be plump and round. If it is only desired to sell only the cockerels as broilers, they should be taken away from the pullets as soon as the sexes can be distinguished and fed a little more soft feed than the pullets. Soft feed and a little closer confinement is about all that can be done until about eight weeks old.

EGG LAYING CONTEST LED ALL THE WAY

At the Napa Egg Laying Contest our pen finished second, 66 pens competing. In our own class, White Leghorns, 22 pens competing, we led all the way. Eggs \$2.50 per 15.

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Free Book

giving a full account of hatching, raising, and caring for chickens,

with details of a Complete System of Feeding.

Will be sent to you on application

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At this stage cut out as much leg exercise as the chicks can keep in health under and feed soft feed altogether, varying the material and way of serving to keep up the appetite. Green feed is good right along until the last week before selling, then it should be stopped, or the flesh will have a green cast after killing. Some people have the idea that because they are not doing the killing this does not matter, but if we want to create a demand for our product, each producer should take a personal interest in sending his products to market as near perfection as possible. Of course no one can please everybody, they would be fools that expected to—but they can do what is right and fair to all concerned and let the rest go. Broilers will digest more if fed a soft diet, which means ground feed instead of whole; and if the feed is moistened with milk or water just enough to make it crumbly they will digest the food better yet. Cooked potatoes and corn meal with a little salt added makes an appetizing dish, and if sugar can be had cheap this adds much to its flesh forming value. When all mill feed is given, one-third bran in bulk, not weight, is good; and this can be mixed either with milk or water. The milk is both flesh forming and fattening; besides this, it makes a superior meat that should demand a better price. But not all so-called milk-fed chickens, are fed milk—not at all—the soft flesh made from lack of exercise enables the dealer to run the milk-fed bluff on an unsuspecting public.

MARKET CLASSIFICATIONS.—Fryers may run all the way from 2 pounds to 3; after they pass that weight they are classed as soft roasters. This weight is not a hard and fast rule; some markets call them fryers up to four pounds. Fryers do not bring quite so good a price per pound as broilers; but a great many of this class are the culls from fancy stock. If they were sold at broiler stage, no selection for breeding could be made; but if kept until they weigh three or four pounds the best traits of a bird can be detected and if worth using as a breeder he can be kept; if not, he can go as a fryer and make room for something better.

The fryer should be confined about two or three weeks before being sold and fed all the soft mash feed he will eat, both to increase the quantity and quality of the flesh.

COMMERCIAL FATTENING OF POULTRY.—The U. S. Department of Agriculture gives a series of experiments in fattening chickens for commercial purposes in Bulletin 21. In the East and Middle West, a great many farmers, and farmers' wives raise chickens up to the fattening stage; and then buyers from the packing houses go around and buy up all these partially raised chickens, fatten them up, can some of them to be sold right back to the original producers and others; some are made into soup, at least some parts of the chicken go for soup, and a great many are frozen in cold storage and brought out when poultry are scarce and prices high, to knock the small feeder and producer.

But to return to the fattening, and this shows more than anything one individual may say as to what the markets call for.

BLEACHING EFFECTS OF BUTTERMILK.—"The No. 1 grade of poultry ordin-

ily sells for 1 to 2 cents more per pound than the third grade; so that a feeding mixture which will produce a greater per cent of the No. 1 grade has a commercial value. Buttermilk is the feed that produces a bleach.

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OUR BROWN LEGHORNS and our Special White Leghorn chicks are well hatched, strong chicks from healthy, vigorous breeders. Per 100 for April and May, \$9; reduction in quantities. San Jose Hatchery, 373 Meridian Road, San Jose, Cal.

S. C. WHITE LEGHORNS—Baby chicks and eggs for hatching from vigorous, healthy, free range, selected hens bred to males from trap-nested stock. Prices reasonable. Our aim, utility stock of high egg production. C. W. Levisse, Maxwell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R I Reds and other varieties. Capacity 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

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FREE—66-page catalogue, describes in detail prices, etc., on 19 kinds of baby chicks, hatching eggs, incubators brooders, etc. We ship everywhere. The Pioneer Hatchery Co., 112 E. 8th St., Los Angeles, Cal.

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INCUBATOR CHICKS—White Rock Black Minorca, White, Brown and Buff Leghorns. All high-class stock. Send for booklet of prices. Mahaj Farm, P. O. Box 597, Sacramento, Cal.

An experiment was conducted at Station 4 to see whether the addition of condensed to ordinary buttermilk was profitable. One gallon of condensed buttermilk was added to 10 gallons of ordinary buttermilk August 24 to Sep-

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

BARRED PLYMOUTH ROCK EGGS from prize strain; extra large. Fine layers. \$1.50 per 15; \$7.50 per 100. Also Ring Neck pheasant eggs, \$1 per doz. Miss F. W. Buckley, R. D., Box 71, West Berkeley.

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ORPINGTONS—ATTENTION. After April first I will sell eggs from all yards at \$2.50 a setting, both Buff and White. Mrs. S. Swaysgood, R. 2, Pomona, Cal.

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CHINESE AND SILVER PHEASANT and Pearl Guinea eggs. E. W. Leffler, R. 1, Box 193, Stockton, Cal.

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201 Main St., San Francisco

tember 18, and this test was repeated October 4 to 18. The birds did not do well during the hot weather, which occurred about the middle of August. Condensed buttermilk was fed about this time and resulted in an immediate marked increase in the fancy grades of dressed poultry. This increase was greater than the relative increase in per cent of gain, showing that the increased consumption of buttermilk produced a larger per cent of fancy poultry, but when this condensed buttermilk was dropped out of the rations on September 18, the proportion of fancy poultry did not decrease. This would appear to show that the addition of extra condensed buttermilk was profitable only during the warm or hot weather, and in fattening small birds. Condensed buttermilk was used entirely in mixing the feed at Station 2 and 3, adding 1½ gallons of water to 1 gallon of the milk at Station 2, and equal parts water and condensed milk at Station 3. This large proportion of milk solids showed very marked results in producing a bleach in poultry."

FARM FEED CONSERVATION.—I have quoted this at length just to show you what the farmer with a few cows and a nice flock of good sized hens can accomplish. But if he sends his cream to the creamery he is just as bad off as though he had no cows. Sending the cream off the farm reminds me pretty much of the Dakota farmer in Pioneer days when he burned all his straw to get rid of it, then in a very short time was forced to summer fallow his land. By feeding the buttermilk to the hens the droppings are returned rich in the very elements the soil needs and this is no small item.

For lack of knowledge sometimes, and at others lack of facilities, the farmer sells both the chickens and cream, he sells the grain and the grass for others to make money out of it.

We have had a lot of talk the past few years about conservation, but the kernel of conservation is on the farm. Turn everything into something else, condense the feed into hog, chicken, cow, and sheep.

But alas, as Sam Foss says, "I am not ordained to preach" so guess I will have to be satisfied with just plain talking at others. Now the grain fed in the experiments were all such as we can have here on the Coast. Low

grade flour or shorts, ground oats, preferably with the hulls taken out, and corn meal. These feeds are all obtainable at any of the feed dealers, and the man who has the buttermilk should experiment a little and convince himself that 1 or 2 cents a pound difference in price of a lot of poultry you are going to dispose of will make quite an item.

The bulletin can be obtained from the Department of Agriculture by sending ten cents in coin, no stamps taken, to the U. S. Department of Agriculture, Washington, D. C.

TIME AND GOATS TO CLEAR LAND.

[Written for the PACIFIC RURAL PRESS by ALBERT F. ETTER, Briceland.]

To clear brush land economically one must have time and Angora goats. Here at Etersburg we have cleared some of the worst kind of sproutings, such as pepperwood, tan and live oak, and white thorn. Not only do all of these sprout persistently, but the California "lilac," "blue blossom" or myrtle, a sister to the white thorn, will come in after a burn and make almost an impenetrable thicket, and in three years the land is in a worse thicket than before it was "cleared."

Here is a method that is satisfactory and thorough. Cut the brush and let it thoroughly dry and burn it clean.

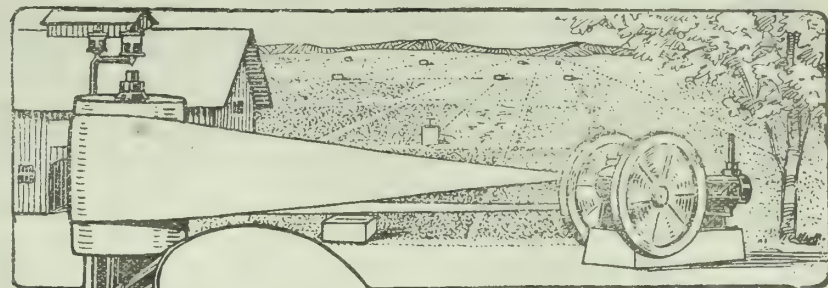
Seed the land thickly with native annual grasses and native clover, rye grass, and orchard grass. There is little use in adding these latter if there is not moisture enough to carry them over; still Italian rye grass is a good annual to use on a burn of this kind. Sow the seed in the ashes before any rain falls on the land after the burn. Here we find rib-grass or narrow-leaf plantain the best perennial to sow for pasture on this reclaimed brush land.

Now as for goats: First put a good woven-wire fence about the land to protect against dogs, and when feed is growing and becoming well set, put in the goats; about one or two to the acre for the first year is enough. Don't put on more goats than is necessary to keep the sprouts down. Let the grass have a chance to establish itself and prevent erosion. Here is the last and most vital point to make: Keep the goats there all the time so the

brush will always be closely cropped, and in three to five years all will have finished and the stumps will readily rot out, if they are not already so. I know of no quick way that is

cheap enough to justify its use extensively on range land.

I find that it is good economy to use rather heavy seeding, especially if brake fern is present.



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Glenwood Springs	Pikes Peak

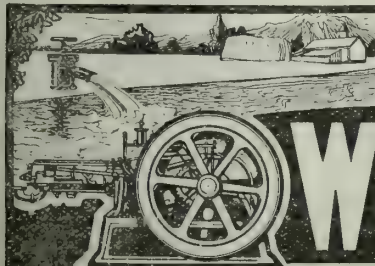
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The Home Circle.

Dried Fruits An Economical Diet.

Fresh fruits are divided into two classes, "flavor fruits" and "food fruits," according as they are valued for their flavor or as a food, according to the Office of Nutrition Investigations for the United States Department of Agriculture. Those that are 80 per cent or more water fall under the first classification (apples, pears, peaches, and most of our common fruits), while those containing less fall under the latter (bananas, grapes, and figs). The food value of a pound of dried fruit is, of course, much greater than that of a pound of fresh fruit. A pound of the latter will yield an average of about 6 ounces dried, but the amount of water in the original fruit is no guide to the food value of the dried product.

The main change which takes place

during drying is the loss of water, but other changes also occur. Very often the right degree of heat produces changes not unlike those which occur during natural ripening on the plant.

In some cases the crude fiber which forms the basis of the plant structure is reduced in amount or softened. Much of the starch is changed to some form of sugar. The change in flavor is due partly to the proportionate increase of sugar from loss of water and to absolute increase from chemical changes.

To determine which of two fruits is more economical, not only must the cost per pound be known, but the amount of bodily fuel that makes for energy and protein (muscle-building material) a pound of each would supply. One must also consider what expense is required to prepare each for the table. Grapes commonly cost less a pound than raisins, but a given sum spent for grapes will buy a smaller amount of nutritive material, since the proportion of water is much higher than in the raisins.

On the other hand, low-priced fresh fruit is sometimes as economical as a somewhat cheaper dried fruit, since the latter would require sugar and fuel to make it ready for the table.

Attention should also be directed to the extent of inedible material.

Numerous studies made of nutritive values by the Office of Experiment Stations have shown that dried fruits may be termed an economical article of diet. Fruit products in general contain little protein, but as sources of energy, derived almost entirely from their sugar, dried fruits are decidedly cheaper than meats and compare favorably with dairy products. They are, however, more expensive than cereals and starchy vegetables, such as dried beans and potatoes.

Under no circumstances should fresh and dried fruits be thought a luxury, since they supply the needed nutritive material as an integral part of the diet, besides adding to the attractiveness of the daily fare. If they are to be eaten raw, brands made and marketed in a cleanly way should be obtained.

The amount of dried fruit produced in the United States increased 575 per cent between 1899 and 1909. California produces more than four-fifths of the yearly output. According to a very rough estimate, each person in this country consumes on an average 5 or 6 pounds of dried fruit a year.

The value of the product rose from between four and five millions to over twenty-one millions in 10 years. The average wholesale price, however, has not advanced with the increased demand; on the contrary, it has dropped from about 5½ cents to about 4½ cents per pound.

Dried fruits are especially useful when the supply of fresh fruits is limited or where storage space for fresh fruits is lacking. Besides being used alone, they may be mixed into cakes, puddings, confectionery, and other dishes. They afford a nutritious and economical way of securing a variety of diet, which is often overlooked by the housewife.

A Common Failing.

She—"Have you got many poor relations?"

He—"None that I know, fortunately."

She—"Many rich ones?"

He—"None that know me, unfortunately."—Puck.

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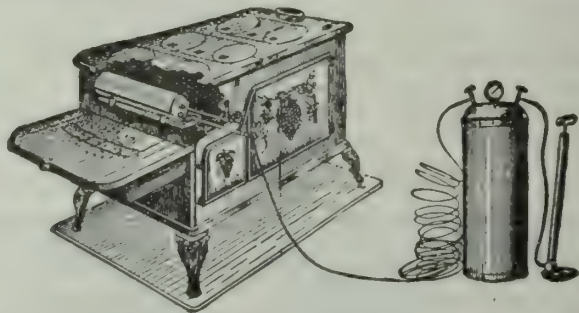
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PASADENA, CAL.

Maud—"Every woman wants to enlarge her sphere."

Beatrix—"True; but not her circumference."—Judge.

How to Make a Rose Jar.

Those who expect to gather and "cure" rose leaves with salt through the months of roses in preparation for a potpourri, will appreciate these directions. If there is a quart in all, you have the foundation for a good potpourri. Now transfer the stock to a glass fruit jar, on the bottom of which you have placed two ounces of bruised allspice and as much stick cinnamon broken into large pieces. The water, if any, should be first drained away. Here allow it to remain one month, closely covered, stirring it up thoroughly every day from top to bottom.

It is now ready for permanent preservation. The blue and white Japanese jar is the best to hold it, for it preserves the fragrance. Now have ready an ounce each of mace, cinnamon, cloves and allspice coarsely ground, the same quantity of sliced ginger root and nutmeg, half as much anise seed and four ounces of musk, with six ounces of dried lavender flowers and again strew rose leaves in the permanent jar, alternating with these mixed spices, moistening from time to time with pure alcohol, using about one gill in all.

It's no use talking," remarked Banks, dejectedly. "It's impossible to make a woman understand even the first principles of finance." "What's the matter now?" inquired Henderson. "Matter!" ejaculated the disgusted Banks. "Why, when I was away yesterday the baby swallowed a three-penny piece. And what does my wife do but call in a doctor and pay him half a guinea for getting that coin back."—Credit Lost.



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Our Young Folks

Two Ways of Moving.

"I don't think I like to move," Philip Ludden said, yawning, and stretching his tired little arms.

It had been a long, hard day for the little fellow, for there are always so many things one does not like to have go on a load of furniture when moving from one house to another; and little boys, if they are nice and obliging, can make themselves very useful.

Philip had carried so many, many things that he could not remember half of them. He knew that he had carried the dining-room clock, because he had had to stop twice to rest, it was so heavy. Of course, he couldn't forget Dexter, the parrot, for he had scolded all the way so loudly that a little girl whom they had met said she didn't know that a parrot could be so scoldy. Whereupon Dexter screeched "Shut up! shut up!" at the top of his parrot voice, until Philip was glad when the new home was at last reached.

Then boxes! my!—Philip could not understand where they had all come from—and lamps—and pictures! Why, it was no wonder that his little arms ached, and that he should declare that he didn't "like to move."

Grandmother Ludden had heard him. Grandmothers often do hear many things that little folks are unconscious of their hearing. And very soon a loving arm drew Philip close, and a low, soothing voice said: "It sometimes helps to hear of people who have had to work harder than we have. I know of a little boy and his sister who, when the family moved, had to drive the cattle a long distance—many, many miles, through woods so dense that their father had to clear the way before them with axes."

Philip was not leaning his tired head against his grandmother's shoulder any longer: he was sitting erect, with his big brown eyes full of interest.

"The cattle, also, had to do their part in moving by carrying featherbeds strapped upon their backs. Pots and kettles hung on straps were carried in the same way by a pair of sturdy horses that were afterward used to help plow the uncultivated land in the new wilderness home," his grandmother went on to say.

"A number of families were moving at the same time, and it took many days for this strange caravan to reach the end of the journey. At night great

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D. J. DOLAN

fires were made beneath the trees, where food was cooked and eaten, and where the tired travelers slept at the end of each day's journey."

"Why didn't they get a man to move them, same as we did?" queried Philip.

"Because every man had to be his own mover in the days of the early settlers," his grandmother explained. "Many of the Pilgrims had not even built homes for themselves, but were living a sort of gypsy life until they should come to a place in which they thought it would be best to settle. Every member of the family had to do a certain share of the work. Even the cattle had their part to do."

"Who were these children you have been telling me about, grandmother?" Philip asked.

"They were two of your Pilgrim ancestors, and their names were Silas and Betsy Harrington," grandmother responded. "They finally settled in Connecticut Valley," she added.

Philip's little form had straightened as his grandmother went on with her recital; and, when she had concluded, it was an earnest pair of eyes that met her own.

"Well, if my ancestors did, all that without complaining, I reckon I'd better not say anything more about carrying a clock and a parrot and some boxes, or—or—anything else, just two blocks," he asserted, with a resolute look in his brown eyes that would not have shamed either Betsy or Silas Harrington, could they have seen it.

—Helen M. Richardson in Sunday School Times.

Smiling Faces.

If we would get the most joy out of what we do, let us do it gladly. If someone asks us to do him a favor, and we have a mind to do it, let us do it in such a manner as will indicate that we are glad to do it. Let us not do it grudgingly, nor in such a way as to cause the one who has asked the favor to wish he had not done so.

Smiling faces not only make friends, but they show that we are feeling right inside; and if we will always appear cheerful, even though at times things do seem to go a bit crosswise, we shall make ourselves feel better.

When father or mother tells you to do something, do not say: "Yes, in a minute," but go at once and do it, lest someone else does it first, and you lose the opportunity of doing your duty.—Children's Star.

Bright, or Lazy.

"Johnny, I don't believe you've studied your geography."

"No, mum; I heard pa say the map of the world was changing every day and I thought I'd wait a few years, till things got settled."—Brooklyn Life.

Mike: "It's like owld times to see you again, Pat. Why did you niver wroite me a latter since last we mit?" Pat: "Oi didn't know yer address, Molke." Mike: "Thin why in the name o'sense did ye not wroite for it?"

THE MARKETS

San Francisco, Apr. 29, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The local wheat market is decidedly quiet, with no great interest taken by either buyers or sellers. Values here have been pretty well maintained, but a weakening in the Northern market will very likely have an effect.

California Club, cti.	\$1.62½ @ 1.65
Forty-fold	1.65 @ 1.70
Northern Club	1.62½ @ 1.65
Northern Bluestem	1.75 @ 1.77½
Northern Red	1.62½ @ 1.70

BARLEY.

Arrivals continue rather large, and include some additional export shipments, indicating an ample supply of old grain. The spot demand here is light, and while holders as a rule are not inclined to make any more concessions, there has been a slight drop for the week. The speculative market is dull and easy, with prospects of an unusually large crop.

Brewing and Shipping..	Nominal
Choice Feed, per cti.	\$1.00 @ 1.05
Common Feed	Nominal

OATS.

Nothing in this line is receiving any attention worth mentioning at present, and while there are no heavy offerings prices still tend downward, some red feed having been sold below the last quotation.

Red Feed	\$1.25 @ 1.40
Gray	Nominal
White	1.25 @ 1.30
Black Seed	Nominal

CORN.

No further change in values is noted and there has been very little trading during the last week in the local market.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @ 1.82½
Eastern White	Nominal
Egyptian	1.85 @ 1.90
Milo Maize	1.80 @ 1.85

RYE.

Values remain nominally at the old level, with hardly enough demand to establish definite figures.

Rye, per cti.	\$1.45 @ 1.50
---------------	---------------

BEANS.

The bean market has made a quick recovery from the slight reaction noted last week, and material advances have been made in blackeyes, large whites, pinks, red kidneys, and limas. The market is firm on practically all varieties, and local dealers say the demand is quite active, with stocks in several lines practically exhausted, and no excessive offerings of any variety. All present indications point to a close clean-up all round. This year's output is expected to be large, but it will be some time before new stock is available. The southern lima planting has just started.

(On wharf.)

Bayos, per cti.	\$6.20 @ 6.50
Blackeyes	6.50 @ 6.75
Cranberry Beans	4.50 @ 5.00
Horse Beans	2.15 @ 2.25
Small Whites	5.25 @ 5.40
Large Whites	3.90 @ 4.20
Limas	6.75 @ 7.00
Pea	4.25 @ 4.50
Pink	3.90 @ 4.35
Red Kidneys	6.50 @ 7.00
Mexican Red	6.00 @ 6.25

SEEDS.

There is nothing of special interest going on in this line, everything on the list being very quiet. Prices are quoted as for some time past.

Alfalfa	12½ @ 15 c
Broomcorn seed, per ton.	Nominal
Brown Mustard, per lb.	3½ c
Canary	7 @ 7½ c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾ c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Quotations remain firm at the old level. Trading is only moderately active, and while lower rates to the Ori-

ent have been made from Northern ports, there is no very heavy shipping movement.

Cal. Family Extras	\$5.80 @ 6.20
Bakers' Extras	4.80 @ 5.40
Superfine	3.90 @ 4.20

Hay and Feedstuffs.

HAY.

Volunteer hay is now being cut in the Hollister district, but none is expected here for some time. Rust is said to be prevalent in that district, but the yield is estimated as normal. Considerable alfalfa has also been cut, but the first cut is generally of poor quality and finds little demand. The local market is very dull, with a considerable quantity of old hay on hand, and while arrivals have been rather light, it has been impossible to keep the tracks clear without further concessions in prices. Quotations on the medium and lower grades are considerably lower, though strictly fancy hay is very scarce and firm.

Fancy Wheat, light bales.	\$15.50 @ 16.50
No. 1 Wheat, or Wheat and Oats	\$12.00 @ 13.00
do No. 2	10.50 @ 12.00
Lower grades	9.00 @ 10.00
Tame Oats	10.00 @ 13.00
Wild Oats	8.00 @ 10.00
Alfalfa	8.50 @ 10.50
Stock Hay	7.00 @ 9.00
Straw, per bale.	65 @ 95c

FEEDSTUFFS.

All lines of feed remain rather easy as to values, and rolled barley shows a further decline. Some rolled oats also have been sold at concessions, although the market is not quotably lower and other lines show no further change.

Alfalfa Meal, per ton.	\$18.00 @ 19.00
Bran, per ton	24.50 @ 25.50
Oilcake Meal	34.00 @ 35.00
Cocoanut Cake or Meal.	26.00 @ 27.00
Cracked Corn	41.00 @ 42.00
Middlings	32.00 @ 34.00
Rollod Barley	22.00 @ 23.00
Rollod Oats	28.00 @ 29.00
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

Asparagus is still arriving in abundance, and while prices have been marked up a little, there is very little moving at the top figure. Green peas show quite a sharp advance, as the demand has picked up in good shape, and arrivals for the last few days have been hardly sufficient for requirements. String and wax beans are lower, with gradually increasing supplies. Lettuce is a little lower, with liberal receipts from the South, while mushrooms are higher. Mexican tomatoes stand as before, and have been in good demand most of the week, though some stock has come in from the East. Otherwise values stand as before.

Cabbage, per cti.	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.	7 @ 8c
Carrots, per sack.	35 @ 50c
Green Peas, sack.	1.75 @ 3.00
Tomatoes, Mexican, box.	1.75 @ 2.25
Beans: Wax	4 @ 6c
String	7 @ 10c
Sprouts, lb.	4 @ 6c
Rhubarb, box	50c @ 1.25
Lettuce, crate	50 @ 75c
Mushrooms, hothouse, lb.	40 @ 60c
Asparagus, box	1.00 @ 1.75
Cucumbers, box	2.00 @ 2.50

POTATOES AND ONIONS.

Offerings of new potatoes are steadily increasing, and prices show a further drop, old river stock also being somewhat lower. Sweet potatoes are scarce and firm. Australian onions have stiffened up a little, and Bermudas are firm. Old garlic is very scarce and firm at the old prices. A little new stock has come in, but none of any consequence, and the quality is not attractive.

Potatoes:	
River Whites	50 @ 75c
Sweet Potatoes, per cti.	\$2.25
Oregon Burbanks	75c @ 1.00
Onions: Australian	\$4.00 @ 4.25
Bermuda, crate	2.00 @ 2.50
Garlic, per lb.	25 @ 30c
New Potatoes, lb.	2 @ 3c

Dairy Produce.

POULTRY.

The local demand is nothing extra, and as young local stock is now coming in quite freely, prices on practically all lines of chickens are lower, though arrivals from the East are moderate. Broilers have dropped sharply, and hens will not bring over 20c. Squabs show a sharp advance.

Large Broilers	26 @ 27 c
Small Broilers, per lb.	25 @ 27 c
Fryers, per lb.	23 @ 25 c
Hens, extra, per lb.	19 @ 20 c
Hens, large per lb.	19 @ 20 c
Small Hens, per lb.	19 @ 20 c
Young Roosters, per lb.	23 @ 26 c
Squabs, per doz.	\$2.50 @ 3.00
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb.	20 @ 21 c
do dressed, choice.	23 @ 25 c

BUTTER.

Arrivals continue fairly large, but have been well balanced by the local and shipping demand, and prices have shown no change whatever for the last week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23	23	23	23	23	23
Prime						
Firsts	22½	22½	22½	22½	22½	22½
Firsts	22½	22½	22½	22½	22½	22½

EGGS.

Eggs have been gradually stiffening up this week, and extras stand 1½c higher, the demand being apparently sufficient to absorb all offerings. Firsts have gone up a cent, and a similar advance is noted in pullets, though the week opened rather easy for this grade.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	22	22	22½	22½	23	23½
Firsts	21	21	21	21	21½	22
Selected						
Pullets	19	20	20	20	20	21

CHEESE.

Values are still rather easy, and while flats are unchanged, both Y. A.'s and Monterey cheese are a cent lower, with abundant supplies.

Fancy California Flats, per lb.	13 c
New Young Americas, fancy.	15½ c
Monterey cheese	12 @ 13 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	23	23	23	23	23	23
Eggs	23	23	23	22	22	22
Cal. cheese:						
Flats	17	17	14	15	15	14

Deciduous Fruit.

Raspberries are now coming in from the south, and sell readily at fair prices. The first gooseberries appeared this week and sold at 15c per pound. The only strawberries offered at the moment are from the Pajaro valley, but these are plentiful and prices are accordingly lower. Cherries are not yet very plentiful, and as there is a lively demand values show little decline. Apples are quiet but steady at the old prices.

Raspberries, crate	\$1.75 @ 2.00
Strawberries:	
Banner, chest	3.00 @ 4.00
Longworths, chest	4.00 @ 7.00
Apples: Newtown Pippins	1.25 @ 1.75
Oregon Spitzenbergs	1.40 @ 2.00
Cherries:	
Purple Guigne, box	1.25 @ 1.75

Dried Fruits.

As the outlook for new crop fruits is now pretty well known, and several varieties are turning out much below expectations, the last fortnight has brought out a sudden revival of interest on the part of buyers, and it is now possible to give fairly definite quotations in some lines. The greatest interest has been in prunes, which appear to be rather short everywhere, and in some districts a large amount of business has been done. It is said that as high as 6½c has been paid at some points, but things have quieted down a little now, and 6c is about the top price. Figs have found a strong demand in the Fresno district, and most of the crop is said to be

sold. Buyers are offering 9c for apricots, which are very short in the northern part of the State, and growers are in no hurry to sell. In the principal districts it is doubtful if many will be dried. About 4½c is offered for new peaches, but there is no very strong demand, and growers are disposed to hold their fruit for a while. The New York Journal of Commerce says:

"What influence the state of war will have on dried fruits as coming under the head of needed supplies for troops in the field, is yet to be developed. In the meanwhile holders of the small spot stocks of most varieties of California fruits are not urging sales. Prunes are firm on the basis of previous quotations, the best that could be done apparently on October shipment out of the new crop being 5½c f.o.b. bulk basis for equal quantities of 40s to 90s, with premiums of a quarter to half a cent on the large sizes. As packers are reported to be offering 6c orchard run to growers, this price seems to leave sellers at a disadvantage. Spot prunes are strong, with an upward tendency in sympathy with Coast advices, but the demand is of a moderate jobbing character, and so far there has been no advance in spot quotations.

"According to telegrams received here, the market for 1914 pack apricots is strong and from three-eighths of a cent to a cent higher than a week ago, owing to less favorable crop prospects. San Joaquin stock is now held at 10c for choice, 10½c for extra choice, and 11c for fancy Royals f.o.b. shipping point, while Santa Clara are held at 11½c basis for equal quantities in the three grades. The upward movement in prices is based mainly on the increasing unfavorable outlook for this season's crop.

"Peaches get little attention from the distributing trade in this section, but packers are not inclined to force sales and maintain prices on the basis of previous quotations. The approach of Raisin Day is without influence on the spot market, and few if any orders for forward shipment are being sent out from here. Prices are nominal and unchanged."

Evap. Apples	Nominal
Apricots, 1914	9 c
Figs: White, 1914	3½ c
Black	Nominal
Calimyrna, 1914	4½ c
Prunes, 4-size basis, 1914.	6 c
Peaches, old and new.	4 @ 4½ c
Pears	Nominal
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	5 @ 5½ c
Seedless Sultanias	4½ @ 4½ c

Citrus Fruits

The Eastern markets are growing better, as the oranges are in better demand. The keeping quality of the fruit is now much better than it has been, and Florida shipments are very light. Growers are now confidently expecting the balance of the season to show good prices. Some sections in the southern part of the State have already shipped all of their navels and will soon begin sending forward valencias. The crop of the latter fruit is said to be of excellent quality, particularly in Tulare county.

Lemons are meeting with rather slow sale, the auction prices averaging from \$2.75 to \$3.50 per box.

On the New York auction, Monday, April 27th, 39 cars of navels were sold at prices averaging from \$2 up to \$3.05 per box, while valencias brought \$3.40 per box. Other auction points in the East averaged with New York that day. On the Los Angeles auction last Monday, navels sold for \$1.37½ per box f.o.b. California. Shipments from California have dropped to about 150 cars per day.

Limes have been marked up sharply in the San Francisco market, as supplies are getting short. Other lines are unchanged, with liberal offerings, but owing to anticipation of an advance in the south there is a very firm feeling as to prices, and the demand is very active.

Oranges: Navels	\$1.00 @ 2.25
Tangerines, crate	75c @ 1.25
Grapefruit, seedless	1.50 @ 2.50
Lemons	1.75 @ 3.50
Limes	9.00 @ 10.00

Nuts, Honey, Hops, Etc.

NUTS.

Prices are entirely nominal, all the old nuts being out of the market, and new values will not be established for some time.

Almonds:	
Nonpareils	19 c
I X L	18 1/2 c
Ne Plus Ultra	17 1/2 c
Drakes	15 3/4 c
Languedoc	15 1/4 c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15 1/2 c
Budded	19 c
No. 2	11 1/2 c

HONEY.

So far no new honey is appearing here, but offerings are expected before long. With a rather large output, and some stock held over from last year, values show no firmness, though there has been no further decline.

Comb: White	12 @ 13 c
Amber	10 @ 11 c
Dark	9 c
Extracted: White	5 @ 6 c
Amber	4 1/2 @ 5 1/2 c
Off Grades	3 @ 4 c

BEESWAX.

Values are unchanged, and there is no great demand, though considerable wax has been arriving in this market of late.

Light	30 @ 33 c
Dark	28 c

HOPS.

The hop market has been lagging for the last week all over the Coast, with no large sales reported either here or in the north. There is little old stock left, however, and a large proportion of the new crop has been contracted.

1913 crop	15 @ 17 1/2 c
1914 crop	14 @ 15 1/2 c

Live Stock.

The only quotable change in the local market is a slight advance in milk lambs. A number of large sheep sales are reported in the country, but this has no effect on the local market at the moment.

Steers: No. 1	7 1/4 @ 7 1/2 c
No. 2	7 @ 7 1/4 c
Cows and Heifers: No. 1	6 1/4 @ 6 1/2 c
No. 2	5 1/2 @ 6 c
Bulls and Stags	3 1/2 @ 5 c
(Grass-fed cattle, 1/4 @ 1/2 c less.)	
Calves: Light	8 1/2 @ 9 c
Medium	8 @ 8 1/2 c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs.	8 3/4 @ 9 c
100 to 150 lbs.	8 1/2 @ 8 3/4 c
Prime Wethers	5 1/2 @ 5 3/4 c
Ewes	4 1/2 @ 5 c
Milk Lambs	6 @ 7 c

DRESSED MEATS.

Steers	12 @ 12 1/2 c
Heifers	11 1/2 @ 12 c
Veal, large	12 @ 13 c
Small	14 @ 15 c
Mutton: Wethers	11 @ 11 1/2 c
Ewes	10 @ 10 1/2 c
Suckling Lambs	13 @ 14 c
Dressed Hogs	12 1/2 @ 13 1/2 c

WOOL.

A number of large transactions have been closed in the North, and a fair amount of business has been done in California, though buyers are not much disposed to buy at present except where shearing has been completed. Values stand about as before.

Spring Clips:	
San Joaquin	12 @ 14 c
Humboldt and Northern	15 @ 19 c
Calaveras	14 @ 16 c

HIDES.

Local dealers report more activity than for some time past, and with supplies light, as they have been all spring, values show some advance.

Heavy Steers, over 56 lbs	15 c
Medium	14 1/2 @ 15 c
Light Steers, under 48 lb.	14 1/2 @ 15 c
Heavy Cows, over 50 lb.	14 1/2 @ 15 c
Light Cows, 30 to 50 lbs.	13 1/2 @ 14 1/2 c
Kip	15 1/2 @ 16 c
Veal	18 @ 19 c

Calf	18 @ 19 c
Dry—	
Dry Hides	25 1/2 @ 26 1/2 c
Dry Kip, 10 to 15	24 1/2 @ 25 1/2 c
Dry Veal, 5 to 10	29 1/2 c
Dry Calf, 7 down	29 1/2 c
Horse Hides—	
Salt: Large	\$3.00
Medium	2.50
Small	1.00

HORSES.

Country business shows increasing activity, and quite a lot of stock has lately been disposed of at outside points, while country buyers have also been somewhat in evidence at the local markets. Shipments to the city have not been as large for the last week or so as they were last month, and consist mainly of light and medium weights, suitable for delivery and general use. As compared with drafters, which have found only a limited demand this spring, this class of horses is moving better than usual.

Heavy drafters, 1700 lbs. and over	\$275 @ 325
Light Drafters, 1500 to 1650	225 @ 250
Chunks, 1350 to 1500	200 @ 225
Wagon Horses, 1250 to 1350	150 @ 200
Delivery Horses, 1050 to 1250	100 @ 125
Desirable Farm Mares	75 @ 100

MULES.

1200 lbs.	\$200 @ 250
1100 lbs.	150 @ 200
1000 lbs.	125 @ 175
900 lbs.	75 @ 125

Special Deciduous Market Report.

Sacramento, Cal., April 28, 1914.

Since my last letter there have been practically no new developments regarding the crop situation in California other than that the movement of cherries is slightly heavier and the demand as brisk.

Pear blight, however, is very prevalent on the Sacramento river and will unquestionably reduce the crop of Bartlett to at least 50 per cent.

Eastern auctions averaged as follows on various varieties:

Cleveland—Chapman, \$3.25 to \$4.50; Pittsburg—Chapman, \$4 to \$10; Baltimore—Chapman, \$6; Chicago—Chapman \$3.05 to \$4.10, P. Guigne \$2.55; New York—Chapman \$2.75 to \$3.62 1/2, P. Guigne \$3, Knights Early Black \$2 to \$3.75 packed in cartons; Philadelphia—Chapman, \$2.05 to \$2.10.

CALIFORNIA FRUIT EXCHANGE,
By J. L. Nagle, Manager.

WHO KNOWS ABOUT "SECOND SIZES?"

To the Editor: While reading the PRESS of April 18, I read an article by W. H. Schrader in regard to the prune crop of Santa Clara. He speaks of "the second size prunes, which form the bulk of the setting," and says they "will either succeed in throwing off the husks or give up in despair and drop off."

I don't know anything about prune habits in the Santa Clara valley, but will say that in this part of Napa county, if there is such a thing as "second sizes" they always "give up in despair." In fact, the reason they are "second sizes" is because they have already given up.

They may still be green, but it is but a matter of a few days when they will turn brown and fall from the trees.

If the Santa Clara prune crop depends on the "second size" prunes, I am afraid it is a forlorn hope—it would be in Chile's valley, Napa county. Some of the trees here are heavily laden, and others are almost bare of fruit.

W. H. W.
St. Helena.

[Who knows whether the "second sizes"—presumably those which come from late-opening flowers—ever come through. It is our observation that they do. Take a look at it this year.—EDITOR.]

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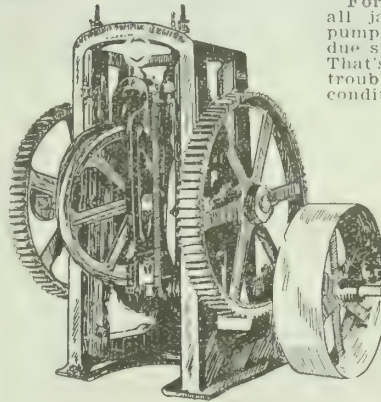
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San Francisco Agents:
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PUBLISHER'S DEPARTMENT.

Here is a pressed brick wrapped up in a compliment thrown at us by A. L. Wisker, of the Loma Rica Ranch near Grass Valley: "The RURAL PRESS is setting a remarkably high standard for agricultural journalism and it is one of the most potent agencies for leading the California rancher into better ways. I find it a constant and a practical help in many ways, notwithstanding the fact that at times you tread so heavily on my political corns that I want to throw a brick at you, and I should find it out of the question to try to get along without it."

While some of our readers may differ with the editor regarding his political beliefs, yet we believe that every one will accord him absolute honesty of purpose in his great work in upbuilding California agriculture. That the work being done by the PACIFIC RURAL PRESS is thoroughly appreciated is attested by the wonderful number of renewal subscriptions we receive, also by the number of new names being added to our list. Last week we secured over 300 and this week 218 new subscribers.

That new book of ours, "One Thousand Questions in California Agriculture Answered," is still going out in large quantities. If you have not sent for a copy yet, we would urge you to do so. At least send to us for our subscription offer in connection with it.

SIXTY-NINE CENTS PER ACRE.

California leads the world in the production of several articles of human consumption that grow on trees and vines. This fact is due to the fertility of California soil and a combination of sunshine and water. The soil and sunshine were none of man's doing, which cannot be said of the water. Water has always been more or less of a problem in many of the richest agricultural sections of the State, which has been solved in various ways. H. R. Lane, of Hanford, meets his irrigation problems with a gas engine. Concerning this matter he recently wrote the Standard Oil Co. as follows: "My statements for the year 1913 show that I have purchased from you 6 bbls. of engine distillate,



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amounting to \$27.70. Have 40 acres on my ranch consisting of fruit, alfalfa, and the raising of summer crops. The above received all the water they required from a 6-hp. engine and a No. 3 centrifugal pump, at the cost of 69 cents per acre."

Farmers' Views of an Eight-Hour Law.

To the Editor: The writer had the pleasure of reading in the Press of April 4th your article on the proposed eight-hour day for all employees. The article, though somewhat facetious in form, expresses the frame of mind of a majority of us who till the soil as a business in regard to the proposed amendment.

The writer has followed diversified farming one-half of the threescore and ten allotted to human existence on Mother Earth, where the population is ever increasing. Every one should know life is maintained thereon by the products of Mother Earth for which Nature and mankind work together.

People—city people in particular—should not be so devoid of thought as to vote "aye" on the so-called amendment, which should it become a law will surely complicate the production of the necessities of life if not actually diminish it. For I believe that some producers will rather be content with a smaller production by doing what they can do for themselves than establish hammocks, lounges, and swimming pools to guard against ennui on the part of their employees before and after hours. The author of the proposed amendment is probably regretting the absence of the Garden of Eden from the present map of the earth. This garden was closed up by our wise Creator, when he saw that mankind could not prosper in idleness.

The farmers of today are of two classes: one class works itself; the other hires it all done. The first class will not be bothered to any great extent, as the members will probably fire the help and run things individually on a smaller scale.

The employing class may get in the game by each one personally taking the place of two or three of his employees, and thus emulate our rural ancestors who, as a rule, lived to a ripe old age in spite of the fact that they found farming required slightly more than eight hours per day to earn a living and keep the farm out of the sheriff's hands.

Farming families are not retiring into the banking class at an alarming rate, at least not in their second and third generation on the farm. This is good. Because if so the producing industry might get into the hands of those idealistic proponents of eight hours' business and sixteen hours for play, foolishness and slumber. Did I say foolhardy? In a good many instances there would undoubtedly be less peaceful rest and slumber than at present.

The consuming public will, according to rules of business, "foot the bill." Farming in California is not a "get rich quick" scheme; contrary to the professed views of our real estate salesmen. On the other hand, it is a good healthful pursuit and if followed year in and year out, with economical management, will result in fair financial return.

What are we going to do about it? Let us vote against increasing the unemployed and decreasing the available food supply by voting the so-called amendment down.

Elk Grove. L. B. JOHNSTON.

ANOTHER FARMER WITH CONVICTIONS.

To the Editor: I have been reading the PACIFIC RURAL PRESS with much interest, particularly the article

entitled "That 8-Hour Day in Farming." I hope you will give us more of them.

How useless it seems to talk "back to the farm" to the people who own farms under such dreadful labor conditions as now prevail. The owners of farms nowadays have no privileges: all the care and responsibility rests on their shoulders and they must pay all they make to the laborers for 8-hours work per day and much of the work is so poorly done that the farmer is obliged to go over it himself to finish it properly. He must not say anything to the hired man or he would leave. The farm owner must also submit to being dictated to by his hired men or he can get no help.

Really it is much better to be a hired man nowadays than to be a farm owner. After he has paid for the labor, taxes, fire insurance and grocery bills, nothing is left the farmer for his labor, care, responsibility and self-sacrifice. No pleasure, rest, or vacation for the tired farm owner. The hired man goes when he pleases, has no care or responsibility, and comes back when he pleases, feeling sure he can come back to work again in the same place or in another just as good. Everything nowadays is done to make the life for the working man and his family easy and pleasant, but the poor self-sacrificing farm owner and his family, no matter how worthy they may be must endure every privation. No one thinks they need any money for themselves: they must work, work, no matter how many hours, day and night, to get money enough to pay all the bills demanded of them to run the country.

No wonder the cities are overcrowded and always will be while the present conditions last. The people will flock to the cities where all the pleasures, soft jobs, short working hours and big pay is. And then they complain of the high price of living. Who gets the high prices? Surely not the farmers. The way they are obliged to dig, pinch and sacrifice to make both ends meet should be proof enough that farming is not a paying business.

It would be needless to urge the people back to the farms were it a paying business; they would go in haste themselves. Give the farmers higher prices for their produce so they can afford to pay a good price to competent help and make a good living themselves, then many of the city people will flock back to the farms without much urging. Until then it will be useless, I think, to get the young and strong men satisfied on the farms.

Stockton.

A SUBSCRIBER.

EUCALYPTUS AS HARDWOOD TIMBER.

[Written for the PACIFIC RURAL PRESS by W. H. SCHRAEDER.]

In view of the conflicting reports on the value of eucalyptus hardwood timber, PACIFIC RURAL PRESS readers will no doubt be interested in the experiences of one of the oldest manufacturers in the State. T. J. Gillespie, of the Gillespie Hardwood Planing Mill Co., of San Jose, has been making eucalyptus wagon tongues, single-trees, double-trees, plow beams, harrow frames, wooden rake teeth, and insu-

Some time ago the RURAL PRESS published a letter from Colonel Hersey in which he told about a eucalyptus plow-beam furnished him by Gillespie that simply would not wear out.

When asked whether eucalyptus timber was hard to handle, Mr. Gillespie replied that he had been in the hardwood business in Ohio before coming to California and that in his opinion eucalyptus was easier to handle than second-growth hickory or almost any other hardwood. To prove his assertion, he showed me sawn timber that had been stacked in the yard for three years, but showed little signs of cracking or warping.

In order to get this kind of timber the trees must be of good size (not less than 2 feet in diameter); they should be cut between September and January, and should be immediately sawn and piled on sticks.

Mr. Gillespie uses different varieties of eucalyptus, but greatly prefers what he has termed the "San Jose" variety. This he says differs somewhat from the ordinary blue gum. The seed of this variety was brought from New South Wales by Bishop Taylor over 40 years ago and distributed in the vicinity of San Jose. The row of splendid trees on Lincoln avenue is from this seed. One of these trees, 4½ feet in diameter, in the yard of Mr. Beans, the banker, was recently cut. Two logs cut over 2000 feet of fine timber. Another fine specimen of this variety may be seen near San Jose. It was 182 feet high in 1910, and was planted by S. A. Moulton in 1870.

The walls and ceiling of the Gillespie office are entirely covered with paneling of eucalyptus veneer. It has a beautiful grain and finish and shows no tendency to crack or warp.

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VICTORIA, AUSTRALIA, WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California no extreme heat or cold. Small deposit and 3½ years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairying, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Box W, 687 Market St., San Francisco.

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720 acres land; 160 fine valley land, suitable for grain or alfalfa; balance pasture; fenced; living water; six-room house, barn, etc. For further particulars, inquire of B. P. PRYOR, Sites, Colusa County, Cal.

FOR SALE—150 acres in South San Joaquin Irrigation District, two miles from Manteca; county road on two sides; one-quarter mile from railroad facilities; \$125 per acre; easy terms. Inquire of E. POWERS, Manteca, Cal.

SEVEN ACRES filled with nursery stock; water, improvements. Inquire for particulars, B. LEONHART, Fair Oaks, Cal.

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WALNUT TREES—Late blight resisting varieties grafted and budded on California black and hybrid roots—Eureka, Franquette, Mayette, Neff's Profitic, Concord and Placencia. Dr. W. W. Fitzgerald, Elks Bldg., Stockton, Cal.

WASHINGTON NAVELS, Valencia, Marsh Seedless Grape Fruit, 1½ to 2 ft. high. Thrifty, budded trees. Bare roots packed in moss, at 35c each on cars Redlands; or by parcel post, 15c extra. Carroll B. Smith, Box 9, Redlands, Cal.

AIM—IMPROVEMENT OF TREE TYPE—Pedigreed Citrus Nurseries. Selected stock. Sour seed bed stock up to 3 ft. tall. F. H. NUSBICKEL, Glendora, Cal. Phone 388.

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Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

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STEAM HARVESTING OUTFIT FOR SALE—BEST ENGINE, HOUSER-HAINES HARVESTER (SEPARATOR NEW), OIL WAGON, WATER WAGON, COOK HOUSE, TOOLS, ETC., everything complete for the field. ALL IN FINEST CONDITION and offered at a BIG BARGAIN. Terms. Entire outfit can be seen in Stockton. STOCKTON ICE & FUEL CO., 33 South Eldorado St., Stockton, Cal. PHONE 47.

NEW CASE THRESHING OUTFIT—32-54 inch separator, recleaner, wind stacker, 60 H.P. steam traction engine, water wagon, 2 new section John Deere plows. Price \$1500. Might trade for some live stock. Box 83, Heber, Imperial Co., Cal.

FOR SALE—Portable pumping plant, International 8 H.P. gas engine and 5-inch pump, mounted on wagon, necessary pipe; all practically new; cost \$600; price \$300. M. P. STEIN & CO., Stockton, Cal. Phone, 421.

ORCHARDISTS: For sale very reasonable, JOHNSON IMPROVED TRACTOR. Good as new. Takes place of 12 horses. Just the thing for your orchard. See J. A. WINKELMAN, Mayhew, Sacramento County, Cal.

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TRACTOR AT A BARGAIN—1912 model Mogul; 45 H.P.; I. H. C. engine; first-class condition. R. F. SCHMEISER, Winters, Cal.

4 and 8 H.P. gasoline engines, guaranteed, induction motors for sale cheap. WILLIAMS, 310 Sansome St., S. F.

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RUSSIAN WOLF-HOUNDS—Puppies and mature dogs of both sexes; special prices. GEO. A. SMITH, Jr., Corcoran, Cal.

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PROFICHI FIGS. Will supply 150,000, 1914 crop, mostly MELCOS and ROEDING No. 3. Orders filed now will receive prompt attention when ripe. THOMAS H. LYNCH, Box 21, R. 3, Fresno.

Moving the Earth by Chunks

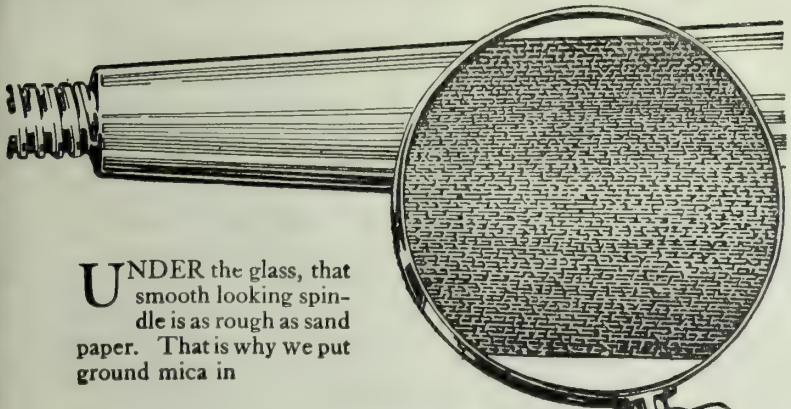
AND PUTTING IT WHERE IT SHOULD BE



Do not forget the SCHMEISER MANUFACTURING COMPANY of Davis, California, will demonstrate their GIANT ENGINE SCRAPER at the Great Tractor Demonstration to be held on the 7th, 8th, and 9th of May near Sacramento.

This huge SCRAPER does the work of 15 to 20 Fresno Scraper Teams, tearing down or building levees and railroad grades, building roads, leveling land for alfalfa, rice or orchards. Don't fail to see this machine and some other labor-saving machinery made by the

SCHMEISER MANUFACTURING COMPANY
DAVIS, CALIFORNIA



UNDER the glass, that smooth looking spindle is as rough as sand paper. That is why we put ground mica in

MICA Axle Grease

The mica fills up these microscopic cracks and pores and with the high grade grease forms a smooth, perfectly lubricated bearing surface for the wheel. That is why Mica Axle Grease makes loads pull so much easier with less strain on horses and harness. No other grease will go so far or last so long. Ask your dealer for it.

Standard Oil Company
(California)

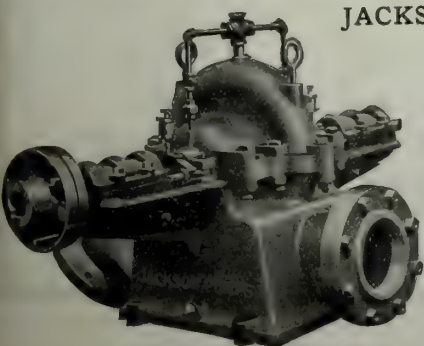
JACKSON HORIZONTALLY SPLIT DOUBLE SUCTION PUMP

Jackson Pumps mean quality—quality in materials, workmanship and design. You get quality that makes for lasting service—reliable service.

The Jackson Pump is the most efficient type of pump—because the Jackson Pump is made in special types to meet every service condition—because the Jackson Pump is made extra heavy and will last.

Write for Catalog 48-B.

Byron Jackson Iron Works, Inc.
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Don't Plaster Your Walls BISHOPRIC Saves Money —Gives Better Results



Beautiful Walls and Ceilings

—better than old-fashioned "lath-and-plaster" at less cost—are insured by the use of Bishopric Wall Board.

Thousands of home builders, carpenters and contractors are saving time and money by using "Bishopric" for interiors of new houses, for building partitions and finishing up attic or basement rooms.

The Wall Board comes in sheets 4 feet square, ready to nail to studding. No tools but saw and hammer needed. Goes on dry. No muss. Stays stiff—can't warp. Makes a smooth, sanitary wall, ready for paint, paper, kalsomine or burlap as soon as applied. Write for Free Sample.

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Bishopric Wall Board is a combination of Kiln-dried lath and heavy fibre board. Laths are imbedded in hot Asphalt-Mastic under enormous pressure. The only wall board stiffened by lath pressure—we own the patents. If your dealer doesn't handle it write us direct. Dealers wanted everywhere. Write today for book, MODEL HOUSE PLANS and sample. All FREE.

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Also Manufacturers of
Bishopric Stucco Board—better
than Metal Lath at half the price.



All Engines are furnished with Magneto.

The Patent Roller Valve Gear reduces the moving parts and upkeep costs. **Armstrong Engines** are a quality product at the price of the inferior. 1½, 2½, 4½, 6, 8, 10, 15, 20-h.p. sizes. Write for catalog and state requirements. **Miller Pumps** are World beaters. If interested get our catalog.

Norman B. Miller Co. San Francisco, Cal.
503 MARKET STREET

California Fruits

And How to Grow Them

The Seventh Edition of this valuable fruit book is now in press and will be ready for delivery about June 1st. The 6th edition is entirely sold out, and we would be pleased to receive orders for delivery of the book as soon as issued.

In revising this seventh edition, Prof. E. J. Wickson is putting in lots of new material besides bringing the figures down to date. The book will contain over 550 pages of text and line cuts, besides 24 full-page half-tone engravings. The binding will be of blue cloth vellum, with the back and side stamped in gold, making altogether a handsome, practical volume, fit for any library and a necessity to every fruit grower.

Price will be as before, \$3.00 per copy, postpaid.

California Vegetables In Garden and Field

By E. J. Wickson, A. M.

We have in stock this book, ready for immediate delivery, price, \$2.00 postpaid.

"California Vegetables" is handsomely printed, contains many cuts, has over 300 pages, and is bound in cloth. The contents cover every phase of vegetable growing, including farmers' gardens, California climate, vegetable soils, irrigation, drainage, cultivation, fertilization, protection, weeds, seed, growing, location and arrangement, planting season, propagation; also description and methods of handling all varieties of vegetables grown here.

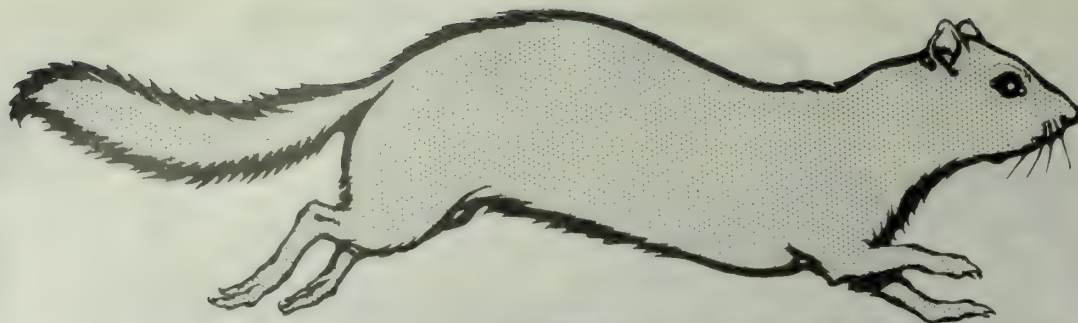
One Thousand Questions in California Agriculture Answered

This book is the third one we publish from the author, Prof. E. J. Wickson. It is made up of questions asked the **PACIFIC RURAL PRESS** by actual farmers and answered by Prof. Wickson. These queries and replies make a book of nearly 300 pages, bound in cloth, and is sent postpaid for \$1.50 per copy. Every farmer should have this book, because problems confront him daily, which are answered in a concise way in this book. Every topic is easily found through the comprehensive index.

For any or all of these books, address the publishers.

Pacific Rural Press

420 Market St., San Francisco



Kill Your Own Pests Then Make Money Killing Your Neighbors' Pests

I can show you how Every dead Gopher
or Ground Squirrel means money to you

WHAT KILMOL IS AND DOES

The most efficient way to kill gophers or ground squirrels is to use **KILMOL** in the U. S. GOVERNMENT DESTRUCTOR. This DESTRUCTOR is an apparatus for forcing poisonous gas into the burrow of any underground pest. In using this method a hose attached to the DESTRUCTOR is inserted into the burrow. Air is forced through the vaporizing chamber, which contains a measured quantity of **KILMOL**, thus forming a poisonous gas.

All the air in the burrow is quickly displaced, and poisonous gas is substituted. The volume of gas pumped in greatly exceeds the cubic capacity of the burrow. The pumping takes only 30 to 45 seconds. The gas is heavier than air, and remains in the burrow for several hours or more, depending on the porosity of the ground. However, the gas remains even in dry and cracked ground over 45 minutes, which is the maximum time required to suffocate any burrowing animal.

The best preparation adapted for use in the DESTRUCTOR is **KILMOL**. It is free from any substance which corrodes metal, or clogs tubes. **KILMOL** contains poisons which prevent the animal from reviving should by any way fresh air get to it.

WASTE-BALL METHOD MAY BE USED

If desired **KILMOL** may be used by the waste-ball method, with a much higher efficiency (from 98 to 100%) than with any other material. Economical results can be obtained during the wet season where the ground is heavily infested. This method is preferable where speed is desired, or where there are only a few acres to be treated. Waste balls will be furnished at a much cheaper price than you can make them.

PROVED AND USED BY GOVERNMENT

KILMOL has been proven by Government tests to be 100% efficient. With **KILMOL** you will have to treat your land only once. With any other method at least two treatments are necessary, meaning added cost for both labor and material. With an average infestation **KILMOL** in the DESTRUCTOR costs only 18 to 28 cents per acre, or less than one cent in money and one minute in time for each burrow.

The same work by any of the other methods costs from 40 to 75 cents an acre, or practically 3 times as much as **KILMOL**. Best of all, **KILMOL** invariably gives 100% efficiency.

KILMOL in the DESTRUCTOR is the only method which can be used in both dry and wet weather. For this reason you can do the work of extermination whenever you can spare the time

PEST DAMAGE NOT FULLY REALIZED

A great many farmers and land owners do not realize what harm rodents accomplish. A few can spoil a young orchard, and they do great damage to crops. California has done more to destroy squirrels and gophers than any other state. **KILMOL** and the DESTRUCTOR were developed to meet the urgent need of an effective and economical exterminator.

TWENTY MILLION DOLLARS DAMAGE

The government's investigation showed clearly the amount of damage done to crops. Their report estimates the damage in one year to crops at \$20,000,000, of which \$5,000,000 was in California.

Burrowing animals breed and increase very rapidly, and every additional squirrel, gopher, mole, prairie dog, etc., means that much more loss to you in crops.

You should realize the amount of damage being done, and that **KILMOL** offers the cheapest and best method of extermination.

KILMOL
SQUIRLGOPHENE

WILL KILL 'EM ALL

Your Opportunity at Little or No Cost

With an average infestation, you can kill every rodent on your farm at a total cost for labor and material of from 18 to 28 cents per acre, and you can make money killing those on your neighbors' farms.

Do you realize the opportunity this offers you to clean up your own farm, and then make money with this DESTRUCTOR? Your neighbors have all seen the **KILMOL** advertising, and will be interested in your success. You can take contracts to kill the animals that infest their land, and make big money.

Get contracts from progressive farmers in your neighborhood to rid them entirely of these pests. You should be able to clear \$1000 the first season from this machine. Its cost is only \$9.75, and by buying **KILMOL** in large quantities, such as would be required, it costs only a little over \$1 a gallon.

Simple to Operate

The DESTRUCTOR is not complicated, is easily carried, and is simple to operate. I send you complete instructions how to work it, and should any difficulty whatsoever arise, I shall be glad to advise you how to overcome it. My interest does not cease when I have sold you the DESTRUCTOR.

A plan showing in detail a gopher burrow, and a simple method of locating the main runway, will be sent free on request.

To any farmer, farmer's son, or man in a small town, this offers an opportunity to utilize all spare time, and make a big profit on a small investment.

Be the live, progressive man in your community to grasp this opportunity. Many farmers have become capitalists by buying a harvester and threshing their neighbors' crops. A similar opportunity is open to you on **KILMOL**.

With your offer for a DESTRUCTOR and **KILMOL**, I will send you a complete set of instructions, and you will have no difficulty in operating successfully.

Many Testimonials

KILMOL is a wonderful success. The Government has tested its value on thousands of acres, and favors it in official reports. Inspectors are using it all over California. These concerns, all large land owners, are using quantities of **KILMOL**:

Natomas Consolidated, Santa Fe Ry., Southern Pacific Ry., The McLaughlin Co., Miller & Lux, Spring Valley Water Co., Barton Vineyard Co., Cal. Hawaiian Sugar Refining Co., Cal. Wine Growers' Association, Crocker Huffman Land & Water Co., Italian Swiss Colony, Leland Stanford University, Simon Newman Co., People's Water Co., Stanford Vina Ranch, and many others too numerous to mention.

TRIAL OFFER - DON'T DELAY - ACT NOW

If you wish to investigate this method immediately, send \$17.50 and I will send the complete outfit; DESTRUCTOR, 3 1/2 feet of hose, carrying strap, and five gallons of **KILMOL**. With an average infestation this will treat over 60 acres. After you get this outfit, and have given it a trial, if you are not satisfied, I will gladly refund your money. Send personal check or money order.

If you want more information about the waste ball method, just mention it in your reply.

DON'T DELAY — WRITE TODAY.

HERBERT F. DUGAN, Dept. C

1170 Sutter St., San Francisco

5 gal. **Kilmol** today—\$100 in crops tomorrow

Strychnine, 65 an ounce. Barley poisoned according to Gov't formula, \$7.50 for 100-lb. drum.



Kilmol Vapor

Fills Burrow

THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 19.

SAN FRANCISCO, SATURDAY, MAY 9, 1914.

Forty-Fourth Year.

The Exposition and the Farmer.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

After months of preparatory planning, with obstacles being daily thrown in their way which were unlooked for, after pleading with some and berating others in the stand they were taking regarding California and its coming international exposition, the chief and his assistants of the live stock department of the Panama-Pacific International Exposition have finally arrived at that point in their work where they can give Californians a comprehensive and intelligent answer to the question, "How will the exposition help California farmers?"

Primarily the live stock department, as is the case with all other departments of this \$50,000,000 show, will endeavor to feature the

meetings of national and international live stock associations, which will be held in the Convention Hall. Here daily lectures will be made by experts in the various branches of animal husbandry. Ample provision for the illustration of these lectures will be made by means of moving pictures and otherwise, and the farmer will have every opportunity to study the world's best accomplishments in the breeding, feeding, and care of domestic animals.

Being built solely for exhibition purposes, the management has laid careful plans that the grounds and buildings be built with a view of compactness and in such a way that all animals will be displayed in the best possible manner. This will give the visitor every opportunity of seeing the most in a short period of time if he so desires.

The culminating point of the live stock show will start with the judging of all animals, which will take place between the following



Proposed Building for Dairy Equipment at Panama-Pacific Exposition.

educational end, in order that every man, woman, and child who attends may gain some knowledge that will be of lasting value to them. In order to accomplish this purpose it is necessary to have every known breed of domestic animal and fowl on exhibition during the entire period of time that the exposition is under way; or, to be specific, from February 20 until December 4. These herds, studs, and flocks will be selected by competent judges of each breed, as being representative, and may or may not be entered for competition for prizes, as the owner sees fit. The cost of maintaining such stock will be borne by the different breed associations, at an estimated expense of \$15 per head for dairy cows, \$12.50 for horses, \$10 for beef cattle, \$5 for sheep and hogs, and 20 cents per month for poultry. Appropriations have already been made by most of the breed associations which are taking an active interest in making their display the most attractive, which will, of course, make the educational value of more intrinsic worth to the visitor. From present indications, the 1428 stalls which are to be provided in the live stock buildings for hogs, cattle, horses, and sheep will be kept well filled; also the poultry division which will feature an egg-laying contest in connection with a spacious building for poultry, pigeons, and pet stock.

In connection with the displays of live stock will be seen the advantage of modern feeds and feeding as well as the benefits to be derived through the use of up-to-date farm equipment, all of which will be shown in a larger and more varied way than has ever before been possible in this State.

Next in importance from an educational standpoint will be the

dates: horses, September 27 to October 9; cattle, October 11 to 24; sheep and swine, October 27 to November 7; earload lots of cattle, sheep and hogs, November 12 to 14; poultry, November 19 to 24. Most of these animals will be brought to the grounds for competition only, and will not be seen at other dates than those mentioned. It is for this reason that the view herds, studs and flocks before mentioned will be maintained. Farmers will be given an opportunity during the awarding of prizes, as well as at other times, of seeing and inspecting animals from all parts of the world, a thing which would otherwise be impossible without many months spent in travel, and even then a full comparison would be impossible.

On the supposition that seeing is believing, we have endeavored to show that the farmer who visits the exposition some time during its progress will be materially benefited by what he sees, and it is natural to suppose that this will include a large majority of those who are now in actual farm work in this State.

In certain respects California farmers are more fortunate than those from other States and countries, in that all of these visitors as well as animals are being brought to our very doors. Many of the visitors are coming for a twofold reason: to see the exposition and incidentally look for land. Others will come with an idea of purchasing breeding stock or of looking into the possibility of future purchases in this State. Especially is this true of stockmen and breeders from South American countries, Australia, New Zealand, and the Oriental countries, many of whom have already signi-

(Continued on Page 546.)

Pacific Rural Press

Issued Every Week at 420 Market St., San Francisco.
LOS ANGELES OFFICE, 239 South Los Angeles Street

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to

PACIFIC RURAL PRESS CO., - PUBLISHERS

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 5, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	34.85	42.95	64	42
Red Bluff	.00	32.53	23.55	84	52
Sacramento..	.00	19.32	19.24	78	48
S. Francisco..	.00	28.94	21.49	72	48
San Jose	.00	18.98	16.18	80	44
Fresno	.04	10.78	9.10	86	48
Independ'ce ..	.43	11.94	8.94	80	36
San L. Obispo	.02	30.94	19.79	70	40
Los Angeles..	.44	23.51	15.24	68	48
San Diego	.26	9.80	9.68	64	50

The Week.

Californians who went out, during the last week, from among the flowers of our valley plains and foothill slopes to cross the interior plateaux of the States east of us, complain loudly of the chills and snows which they have encountered, and which cause them to look back longingly upon the temperature-delights of their home environments. While they are thus repining, they should not forget that they owe California's escape from the blizzard to the mountains beneficently piled up along our eastern border by creative design. If these mountains had not been uplifted to form the western levee of the wide trough through which blasts from the north flow toward their southern dissipation, they surely would side-step and make California quite otherwise than as she is, climatologically. As it is, we get quite as much of that sort of thing as we have any use for. We have a piece of it pretty true to type, of course, in the counties east of the Sierra Nevada and below the southern tail of them, where the Mojave plateau opens eastward, but these regions are only Californian to give us title to the infinite variety of conditions which makes our State unique. We also get certain by-products of this interior blizzard in the dark skies and chilly air which have largely prevailed over the State—culminating in the considerable rainfall which has led our Kern county friends to rejoice in this year's exceptionally good outlook for their dry-farming. In other regions, both on valley and coast, the week has hardly been as good a producing agency. It has delayed early-ripening fruits somewhat, and it has favored the multiplication of plant lice and mildews which our normal spring heat sets bounds upon, especially in interior valley and foothill regions. It has probably influenced considerably the fruit-drop which has largely reduced some crops

and for which growers should be alert to get what compensation they can from higher prices, which are fully justified. But while we lament these things, we should not forget that we have perhaps been saved from much greater evils in the form of frosts which would surely have been sharp if the ocean had not thrown her mantle of clouds over California while the storms raged east of the mountains. Adoration, then, from every one of you, for the creative beneficence which spread the ocean wide and lifted the mountains high—all for the sake of California.

A Strictly Family Affair.

We desire to have it clearly understood that the PACIFIC RURAL PRESS is an up-to-date, twenty thousand human power, auto bus, to carry our regular subscribers to fuller joy and prosperity. Since we tooted the horn for a start against the amendment looking toward local option in taxation, there has been a rush of strangers around the machine trying to turn the crank and start us off with our nostrils full of socialistic gasoline. We have to inform them that this outfit does not move that way. It is strictly a family affair. We do not allow outsiders to start the machine nor climb upon the side-boards to harangue the regular passengers. We do not profess to maintain an open forum for the whistling of all kinds of wind. We love our own cranks, of which we are ourselves, perhaps, the most cranky, and we rejoice to give our own people a good chance to proclaim or to suggest what seems to them for the common good. In consonance with this policy, we give two subscribers, on another page, free field to impugn our knowledge and our motives to their hearts' content. Of course, we do not think they are right either in their facts or their philosophy, but that does not matter: they are our own people and they can say what they like about us or about their own notions. As for others, we will not stand for them. Some of them take the trouble to tell us that this local-option scheme is not single tax. Of course, we do not need to be told that. It is not single tax, but it is worse than single tax because it is a concealed trail to that destination and therefore easier to lead people into. It is ostensibly a city proposition, and therefore does not affect the country, they say. This is the opening to another blind alley, with a pot-hole at the end of it. Agriculture has been discriminated against all along because the farmers' property was out under the sky and the assessor could see it all. Other greater accumulations of property have been concealed and therefore never adequately assessed. These accumulations have obviously always been in cities and their escape from assessment has made the country bear more than its share of taxation and farming bear more than its share as compared with other vocations of men. Now the proposition is to abandon the effort to make all property share in taxation, in which considerable progress is being made of late, and place the whole burden upon land-owners who have always carried too much of it. We claim that as this comes up as a local option proposition, the farmers should have a right to say what should be taxed in their communities. They should and they can: without setting free all other kinds of property than theirs in the operation. Farmers, individually and in their

associations, should give more attention to the subject of taxation. They have voting power enough to elect an assessor pledged to assess idle land within a reasonable relation to the selling value of active land similar and adjacent. If they do not secure this, it is plainly their own fault. Suppose they are taxed for their improvements? The compensation for that will come through catching all other values: franchises, and non-agricultural accumulations of all kinds, for when this is done the burden upon a farmer's improvements will be light. Go to it, members of the RURAL family: if we are wrong, pitch us out of the driving seat, and knock us about as much as you like. One thing, however, is sure: we are not sitting here to be slammed by any Hessian who runs up from the outside with a bag of wind.

One Meal a Day.

How are you getting along with your consideration of that lovely eight-hour day for farm hands—in the house and out of it? We are doing finely and perhaps we can help you a little. You will remember that we were appalled a while ago at the thought that we might be thrown down to one meal a day. Well, have you ever fully appreciated how science comes to the help of bewildered, discouraged humanity every little while and makes the way to success so clear and bright? Fortunately, such help comes again right now when the farmer's wife cannot possibly see how she can provide cook-shifts to get more than two meals a day and the farmer himself cannot figure how eight-hour field work will give him grub enough for more than one. It takes real science to dispel doubt. Chiefly no doubt to uplift Californians who are desponding over the eight-hour menace, it is cabled from Paris that "Professor Bergonie, of Bordeaux, the eminent authority on dietetics, declares that the principal meal of the day should be taken at 7:30 a. m. so as to obtain all necessary energy for the day's work and to restore the liver, emptied by the night's abstinence. A second meal, a light luncheon of milk, sugar and cakes, should be taken about 4 p. m. Finally a third light repast at 8:30 or 9 p. m. would complete the day's nourishment."

This you see gives the farmer one meal and allows him to brace up to a buffet luncheon to which he can help himself, twice a day. It gives the hands and the cook all the afternoons for baseball fanning, without interfering with the farmer working himself all day, because he is more fit to work hard without having any heavy meals. Prof. Bergonie also has a scheme for preventing the hands getting too heavy to sit on the bleachers, for he "has invented an electric bed in which the passage of the current through the body of the subject sets up organic combustions similar to those brought on by muscular exercise and leads to reduction of obesity." Thus science frames up an eight-hour day for all but the farmer himself and everyone is the better for it!

Our Pasturage Resources.

One can hardly go about in rural California this spring without deploring the fact that our population of grazing animals is so scant. We are developing the forage capacities of our moist and irrigated lands commendably, and some people are figuring upon the chance of shiploads of alfalfa meal by Panama canal for

sale to the animal feeders of the Atlantic Coast and Europe. It is well worth thinking of, because we should look into all opportunities, but when one gazes upon the ungrazed expanses of valley, foothill and mountain this year, it is clear that something is wrong when so much of this growth goes for beauty on the landscape and perfume in the air. But some one will say: this is an exceptional year for forage because of the unusual rainfall, and stock was hungry on those same lands a year ago. That is true enough, but, as a State-wide affair, it should be clear that the improvement of alfalfa-bearing lands, which will soon yield an immense surplus of summer grazing and hay, practically rules out the danger of overstocking wild pastures, or, at least, makes that danger vastly less to owners who will associate both irrigated and wild pastures in their scheme of production. Some are doing it, of course; some have done it for the last thirty years or more, but it is not adequately recognized as a State policy in production. Every good acre of alfalfa makes safe the stocking of ten or twenty acres of winter and spring pasturage, and then the danger of having stock without feed largely disappears. And we have such a glorious climatic capability in that line. Really we should not think of shipping alfalfa hay, either whole or ground; we should ship condensed products, meats, dairy goods, etc., which reduce relative freight cost and concentrate value—besides leaving by-products to keep the land in good heart. It seems silly that we should neglect such enterprise when the world cries for meats and other people are undertake such strenuous things to meet the demand. We have seen readings of the resolution of Wilfred Grenfell, of which an outline is abled from London this week, as follows: "I am bent on developing Labrador, my adopted country, the Norway of the American continent. The most important commercial task before me is to start reindeer farms to meet the demand for reindeer meat in Canada. I hope to surpass the meat supplies of Alaska. The Canadian government is building two large harbors on the east coast, whence the frozen reindeer meat may be brought to the United States and to foreign countries also. I am also going to work for the preservation of the valuable fur-bearing animals, which have been hunted almost to extinction."

As one contemplates the spirit underlying such an enterprise and the difficulties which beset it, it surely seems an economic crime to let grazing land lie almost idle in California, where natural resources for animal products are so rich and easy to develop. We hope the coming Panama-Pacific Exposition, to the animal features of which Mr. Loomis alludes so interestingly this week, will have a strong influence in turning general attention to this matter.

The Hay Problem.

Lacking the present ability to feed hay locally, the question of selling to a profit in the face of a large prospective product becomes a very difficult one. This being the case, the producer must put the stuff into the bale at the least cost, to meet the outlook. The report from a large hay district comes from Hollister this week that the crop in that valley is estimated at 30,000 tons. Cutting of volunteer hay has started. Labor appears to be plenty, but

men are demanding \$2, and in places \$2.50, per day and board. Rather than pay this high price to native labor many farmers are employing Basque emigrants, whose work is not so satisfactory, but they work longer hours for a lesser wage. A price of \$1.75 per ton has been agreed upon by hay balers, as against \$1.50 formerly charged. Of course the growers prefer American labor at such a masterful business as handling hay. The only question is, can they use it and live, and when the outlook for price is uncertain they must use every chance to come through. This is not sentiment; it is business, and surely nothing should be done to make it harder.

Queries and Replies.

Querists must submit full names and addresses.

Shocking Grain.

To the Editor: Is it necessary, after binding grain, to turn the bundle so that the heads of the grain are up hill? Does the grain fill better if this is done?—C. Y., Livermore.

There is ample demonstration that the grain in the head is benefited by the passing of substance from the straw to the head after cutting. We are not aware at the moment whether the capillary movement or the cellular movement is affected by gravity or not, or whether the bundle is made to stand right side up or otherwise for that reason. Presumably it would work better if the bundles in the shock should stand as the grain grows; but that is not a demonstration of it. However that may be, there are other reasons which clearly demand that the head should stand on the straw and not the straw on the head. One is the reduction of loss by shattering; the other is the reduced danger of loss by storm water. The former is of course greater and the latter less in the dry harvest weather of California, but the total may be about the same in favor of standing sheaves on their butts and not on their heads. On the other hand, the chief advantage of shocking, in California at least, is to get the benefit of slower curing, and the enrichment of the head at the expense of the straw, before rapid drying could stop the process. As for the reference to the hillside, the slope would have to be pretty steep to be a ruling factor. In any case we should put the heads upward rather than downward—unless there was some local wind action to look out for.

Thinning Shoots While Thinning Fruit.

To the Editor: I noticed an article in your paper describing pruning peach trees in May by thinning suckers on the tops of the trees. Has this method of pruning been put in practice, and do you recommend thinning the suckers or topping the suckers and new wood back during the month of May? I have tried pruning part of the fruit off when I found the fruit had set too heavily, but found that it stunted the growth of the tree and worked injury to the orchard. I find, however, I can get the new growth thinned out at this time of year at little expense when we are thinning the fruit. I wish you would give your opinion.—C. F. W., Sanger.

We do not recall the matter to which you refer, and therefore cannot speak definitely as to whose experience it is based upon. You use the terms suckers and shoots as synonyms, do you not—referring to the same sort of growth by both words. That might lead to some misunderstanding. To us the word "sucker" means a rank, strong growth which would re-

sult, if not interfered with, in a new branch and rob the branches already in place of their vigor. Such suckers should be taken out as soon as seen to be of that character, for they pervert the tree or a main part of it. They should not be shortened unless you need a new branch at that point, and then summer-pruning will check them down to decent activity. This would rarely be desirable. As for removing surplus "shoots," which to us mean breaks of fruit wood, we would thin them by removing them cleanly at their starting point rather than shorten them in May, for that would induce them to send out sprays of laterals and fill the tree with brush beyond its power to develop strongly and use properly. The same thing would follow shortening shoots which you do need to retain, above the fruit. Our own experience seems to justify thinning away surplus shoots by complete removal of them and hand-thinning fruit, without summer-shortening, those desirable to retain. This seems to give stronger wood for the next season's fruiting—subject to the regular winter pruning against too great height, branch, extension, etc.

Removing New Wood from Blackberries.

To the Editor: Blackberries are sending out a large amount of new growth, and I wish to know whether this should be tied up and saved for next year's bearing wood or whether it is proper to remove this and allow the vine to send out new wood after the berries are gathered. Some of my neighbors claim the vines will produce enough new wood after the berries are gathered.—A. C., Lindsay.

Your neighbors have one on us. New wood can be cut back pretty low and send out laterals enough after the crop is off to bear next year's crop, but we never saw complete rejection of the new wood practiced. Get them to tell us about it and mention the kinds of blackberries they treat that way successfully.

Rose Mildew.

To the Editor: Will you kindly tell me what is the matter with these rose leaves?—Subscriber, Delano.

It is rose mildew. Powdered sulphur, as used on grape vines, usually checks it, but some roses are so badly attacked that immune varieties have to be substituted for them. Fortunately there are roses of all colors which are strongly resistant. You can find them by looking through the gardens in your neighborhood, probably.

Bees and Orange Blossoms.

To the Editor: Is it true that bees are injurious to orange blossoms? Is there any law in this State prohibiting the keeping of bees within a certain distance of an orange grove?—N. M. C., Red Bluff.

We know of no such injury nor of such a law as you mention.

Poisoning Gophers.

To the Editor: In my experience with gophers I have found the following methods very effective. I take a narrow pine board which will split easily and straight and saw off blocks sufficient to make, say, from 100 to 1000 "toothpicks" about 3½ inches long. I sharpen both ends of each "pick." Next, I put a poisoned raisin on each end of pick and place in a tight fruit-jar labeled "Poison." These I keep in stock. I carry in my vest-pocket, in a suitable receptacle, about 20 of these impaled raisins. When I discover an open hole, I simply plant the sharpened end of the pick into the side or roof of the hole, and the gopher cannot help but see it, and 19 out of 20 will eat it and die. I put one into each opening.—J. H. HUBBARD.

Foothill Olive Planting.

[Written for the PACIFIC RURAL PRESS
by R. E. HODGES.]

Ninety thousand olive cuttings were imported into Yuba county the first three months of 1914, according to Horticultural Commissioner G. W. Harney. Of these, over 30,000 are to be used on the Ehman Olive Company's land. The same company has just set out 200 acres to olives in Shasta county and will put in 300 more for investors. H. P. Stabler, horticultural commissioner of Sutter county is advising his constituency to plant olives and walnuts. The Natomas Consolidated Company has planted 7300 "pedigreed" trees near Fair Oaks, Sacramento county. S. B. Onyett, of Palermo, recently sold 55,000 olive cuttings to a man at Fair Oaks. The Hammon Co. is planting 90 acres near Palermo. An olive growers' association was recently formed at Marysville, having representatives among its officers and board of directors from Sacramento, Marysville, Browns Valley, Live Oak, Palermo and Red Bluff.

Thousands of young trees have been set this season; the planting continues, and will continue all summer, especially through May, all along the eastern side of the Sacramento valley. All this shows a tremendous interest in olives.

That it is safe to plant olives at any time is shown by the various people who have succeeded in starting them at all seasons. Of these, only a few can be mentioned here.

It was 26 years ago that Judge Gray set out the first olives near Oroville, in November. They were one-year trees and leaved out finely next spring. The next June and July, E. W. Fogg set 40 acres in the Thermolito district. His were three-year trees and they bore the first olives. They were grown from "truncheons" (big olive branches split into quarters) and were planted in holes dug 2 feet deep and 2 feet in diameter, filled with top dirt so the trees would be no deeper than in the nursery, and settled with the abundant water from the miners' ditch. Some of the trees were six or eight feet tall; all had big heads and big root systems. The roots were well spread out, in the holes; the tops cut back to four feet, and all the leaves stripped off. The new orchard looked like 40 acres of sticks, but in 30 days they were putting out new leaves; and had made considerable growth before fall. It is of interest to know that the recent winter winds which blew down many of his neighbors' trees did not take any of Mr. Fogg's, though his grove is as much exposed as anybody's in the district. This fact was brought out in connection with the objection of W. F. Wright, of Fair Oaks, who points out that olive trees grown from seedlings and budded, put down a tap root and hold the tree against winds, while the main roots from cuttings go almost at right angles to the tree. This is a valid objection in windy countries for the first several years of the tree's life, unless an ample wind-break is provided. As a matter of fact, the seedling nursery stock is almost out of commercial use, though near Chico, E. Wightman, of the Chico Nursery, claims they are growing in favor. Mr. Fogg recently dug down two feet to his waterpipes, 12 feet from the trees, and found roots as big as his wrist, showing why his old trees from cuttings are able to withstand

wind. The trees are now almost touching branches, though they were set in 30-foot triangles, making 55 trees per acre, whereas many people set 100 trees.

In the Fair Oaks colony, the Hoover Brothers were setting three-year olives on April 25, on the C. E. Weikert ranch. They dug holes 18 inches deep and 3 feet across, then bored 3½ feet deeper into the tough red clay subsoil, with a 1½-inch auger and exploded two to five sticks of 25% dynamite, the amount depending on the depth of the hard soil. This was done last fall while the ground was dry and would not pack seriously.

Before setting the trees, water was run into the holes, by a ditch from a hydrant on top of the hill, so that the dirt in the hole was settled and slushy. They learned to water the lower hole first, so the ditch would not be full of water to waste when the last hole was filled. The tree roots were kept wrapped in wet burlap until planted.

Wherever necessary, top dirt was thrown in so that the trees, when set, would not be deeper than they had been in nursery. The roots were cut off to about 8 inches, there being usually three or four mains, without a tap root, and very few fiber roots. The lowest head limb was about two feet above ground; other branches took up 12 to 18 inches more of trunk-length. They were left three or four inches long, but most of the leaves were taken off. Having been set in line, top dirt was thrown over their roots and leveled to hold the water that was turned on when the row was finished. It was surprising to see how much the dirt and trees settled in ten minutes at the second wetting. Dry dirt thrown around the trees after the water settled away prevented baking, and the leaves never wilted.

J. A. Bannister, in the Carmichael colony, plowed a furrow for irrigation through an oat field, heading out, beside the proposed line of olive trees. Then he spaded the ground six feet in diameter for each tree, had it dynamited, and set little trees which can scarcely be seen as one rides by the new orchard, but they are all thriving.

One of the most experienced olive planters in that section is G. E. Feters, who has set out many young groves, and recently finished what he thinks will be a prize ten acres for V. S. McClatchy.

He plowed it eight inches deep last fall, then laid it off with a common two-strand, twisted, smooth fence wire, in which quarter-inch stove bolts, one-half inch long, were fastened tight with small washers, 20 feet apart. The field is rather rolling and perhaps the trees will not line up in all directions, but this seems as satisfactory as any other practicable way. Distances between bolts are easily regulated, and they do not slip. Solder spots on smooth wire often move and the change is not discovered until the trees are set.

The hardpan is six or seven feet down, averaging 15 inches thick. Mr. Feters buys wood augers, 1¼ inches in diameter, by the dozen, and keeps them in good cutting order, for the six or eight men who work for him. They bore just through the hardpan, then tamp in about three inches of dirt (more if the hardpan is 2 feet or more thick) and explode 1½ to 3 pounds of 25% dynamite per hole. The

explosion should not throw much dirt, but should lift it all for a radius of a few feet, and the report should be muffled; if it is not, then the dynamite has not been placed right.

This dynamiting was done in the fall and the holes aerated till the rains came. In winter the hardpan chunks were pretty well cleaned and replaced with good dirt which settled in the rains. In spring it was plowed, leveled and harrowed, so the soil is in seed bed shape.

The trees were cut back from their height of 5 to 8 feet to 22 inches, and all branches cut off close except a few at the top for a head. These were left three inches long. Nine men planted the 10 acres in a little over one working day of 9 hours on April 9 and 10, just before a light rain.

One row east and west is Manzanillo, the next is Mission, and so alternated across the field. As soon as their branches touch across the rows, alternate diagonal rows will be taken out, leaving the remainder in squares, the sides of which will be the diagonal of the original 20-foot squares. The four trees nearest each Mission, will be Manzanillo, and the four trees nearest each Manzanillo will be Mission.

No water was applied at planting,

nor until 18 days later, and the trees showed no signs of distress. Mr. Feters was unable to irrigate sooner, as would probable have been better.

After planting, the orchard was disked both ways and harrowed before water was applied, and a little later subsoiled 18 to 24 inches deep. It will be continually cultivated, as Mr. Feters takes special pride in this orchard and will take care of it himself.

A novel feature of the new plantings in this colony is the newspaper stereotype matrixes used as tree protectors. Mr. Feters buys them in quantities at 1 cent per sheet. Each sheet makes two protectors about 18 by 14 inches. Their edges are just lapped around the tree, each edge being torn a half-inch deep near the top and opposite the tear on the other, so the two would fit into each other and prevent the three-inch diameter of the cylinder thus made, from becoming smaller. The bottom diameter is left a little larger. Strings are tied around the top and bottom to hold them together and they last in good shape three years, not needing perforations because of their light color and large diameter. Neither rabbits nor sun-burn bother the trunks thus protected.

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Prune Pointers by a Grower.

To the Editor: Before me is the last issue of the RURAL PRESS in which the question is asked, "Is the short prune crop due to lack of pruning?" I am going to try to answer this question, for this part of the country; maybe I won't be very successful, but I am going to try.

First then, why are there no prunes? Not because there were no blossoms, Oh! no. There did not seem to be room for another blossom on the trees, either prune or cherry, and yet both prune and cherry crops are going to be light, with few exceptions. In this section we think that the light crop is due to the extremes of heat and cold. I will explain what I mean as I do not wish to be misunderstood; everybody remembers how hot it was in the fore-part of March, hot is the only word that will express the weather, because the thermometer registered close to 90 degrees in the shade. The nights were so warm that open windows and less covering were resorted to in order to be comfortable. This weather lasted for about a week, maybe more. As one grower remarked, "Don't be alarmed we will have some winter yet, maybe a flurry of snow." We did not get the flurry of snow, maybe there would be less lamenting about the shortage of prunes if we had, but we did get the coldest weather we had had all winter. On the night of the 26th of March it tried hard to rain, but the wind was in the wrong direction. It managed a shower and the trees, then about shedding some through that period, got just wet enough so that when Jack Frost came along they got a bad chill and this we blame for our short crop of prunes. That was the first indication of ice we had this winter. I remember one year since I have been up here it was either 1896 or 1897, that we had snow and ice and it seemed to me it was impossible there could be any fruit with such weather in blossoming time, yet there was a big crop of all fruits. I have been told that a frost will not injure fruit providing the trees are not wet.

There was one thing I noticed this year and that was the scarcity of bees and I had the idea that maybe the blossoms lacked in that material, which goes for pollination, on account of two dry years, as we do not irrigate, but depend on the season's rainfall. As I have no kick coming personally, as I have 100 per cent of a crop, I take it for granted that the bees were busy elsewhere. I did not do any pruning this last year, except to cut out watersuckers and in letting the orchards I know, pass my mental vision, I see one that has not had acquaintance with the pruning shears or saw in nine years. The top part of these trees are dead, yet the lower branches have a good crop, one that puts the orchard on the other side of the fence to shame. The orchard on the other side has been pruned and it has almost looked as though its owner had a grudge against it since 1912. In that year it had such an immense crop that one party remarked that, "the only way to express the amount of prunes on the trees properly, was to say the trees were lousy with them." The owner said he did not think his trees could be surpassed, but he was to find out there was another side to the matter. He cultivated nearly up to picking time and

then looked for his help. Others got contract workers, he could not get any. Why? Because as one party said, "You call them prunes, better call them beans." He was obliged to pay \$2 a day for his labor. Then came the rain in September, after which it was slow, disgusting work if one wanted to pick up only good prunes. That particular grower came to the conclusion it was money in pocket to let the prunes rot, how many tons no one knows. Last year that same grower had but seven or a fraction more tons of prunes, this year he expected a big crop on his new wood, but I am told he has next to nothing.

The grower on his other side, whom I met recently, told me he had a pretty fair crop but strange to say the fruit is mostly on one side of the tree. This I have also noticed on another neighbor's apricot trees so I would say that the shortage of the prune crop is not due to lack of pruning, but to the elements over which man has no control.

A number of growers got the idea that heavy pruning was in order after the 1912 crop. One told me his experience thus; he had rented his place in 1912 and told his tenant "If you want lots of prunes, prune light, but if you want a light crop prune heavy." The tenant pruned light, to judge by the crop he had. Well, the grower had other interests, so hired an Italian, told him how he wanted his orchard and vineyard treated. The grower returned just about the time the man got through. He told me: "I asked him do you want to wait four or five years for your money? He said, 'No like money now.' I told him, it seems to me by the way you have treated my orchard you intend me to wait that long. He said, 'Bye and bye more and better fruit.' The grower said bye and bye I dead, want fruit now."

He is another one whose crop is reported short. Yet there are growers who do just that; they prune very heavily and then let the trees go until they get lousy with prunes, then give them another cutting. I would never advise any one who wants prunes to prune heavily. The last time I pruned heavily was four years ago, with the result that I had less than 1½ tons, where I had had nearly 10 the year before.

My neighbor had little more than half my trees and he pruned but 30; sickness interfered, and he had nearly 4 tons of prunes, which went 49 to the pound. Mine were not one whit better and I had so many less. Why? because I had pruned too heavily.

I will acknowledge that pruning is necessary to the longevity of a tree, maybe I should say prune tree, as cherry trees are never pruned in this section, but pruning is not absolutely necessary if one is not particular to the size of the prune. There are other things which help to make the size of the prune besides pruning, such as plowing in the proper time, and keeping the surface moisture. Even then all is not said and done, for what good will pruning, plowing, cross-plowing, disking, harrowing, and rolling the ground do if one is careless in the handling of his prunes when on the trays and allows them to dry to bone?

The manager of a large packing house once showed me some prunes of which he said, "That grower lost 40% by too much drying."

I had almost forgotten to mention

the method of one other grower who prunes heavy every year as he is a strong believer in quality, not quantity. With him, I have thought pruning is a hobby, at any rate he says none of his trees have a hatful on. He contends that trees will not raise brush and fruit at the same time, not fruit of quality. I contend that trees cannot produce new wood, each year, and fruit enough to make it worth while, if one chooses it as a means

of livelihood.

One thing more ere I close; the biggest crops of this section are on the lowest land and on orchards that have not been pruned.

That's all I have to say, and Mr. Editor, if you do not believe it, I invite you to try it. You will never get closer to the heart of nature, than when you are on your hands and knees picking prunes. GROWER.

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The Exposition and the Farmer.

(Continued From Page 541.)

ded their intention of purchasing heavily while here. This will mean a broadening of our markets for stock, a need that is most noticeable at this time. It will also bring many land buyers to whom we will be able to show our live stock possibilities and in this way materially strengthen our position in the live stock world.

With the vast educational features, with a broadening of our markets and with an increased population to develop our live stock resources, it would seem that the exposition will have a marked effect in helping the farmer but there is one last feature that should not be overlooked, that will make all of the before mentioned things possible. This is the amount of better bred animals that will be scattered over the State, both for breeding and utility purposes.

It might be said that this last feature will have a more far reaching effect than any of the others as it will exert a marked influence on the future producing powers of our farm animals, meaning thereby an increased revenue to the farmers of the State, as well as furnish them with breeding stock with which to supply the newly opened markets for purebred stock in other countries.

On the face of the thing, a great many farmers will suppose that with the closing of the gates of the exposition all further good than that mentioned will have been done, but looking at it from a broader viewpoint we find that the real value to farmers and to the live stock industry as a whole will have only commenced at that time, for it will have opened the way toward several things which we have long needed, but which could not be easily attained. Among those points which seem of more importance at this time and which will be made possible by the exposition are more farmers to cultivate our idle lands.

This fact alone will recompense all of the expense and effort that is being made, but it only represents that part of the benefits which will be shared by all visitors alike and does not show the immense value that the exposition will be to California long afterward.

THE FARMER LIKES TAXATION—GIVE HIM MORE.

To the Editor: Being a farmer I was quite interested in your criticisms of Assembly Amendment No. 7, but after having read your sweeping statements against the proposed amendment, it seemed to me that political economy was not exactly in your line; for the actual facts surrounding us farmers are not in accord with your arguments, if they are to be taken as such.

My neighbor pays about \$16 of taxes on the same acreage on which the writer pays \$84, and this is because he lives in Oakland and enjoys automobile rides, while your humble servant is working hard to improve his place and the harder the work and efforts the more is he fined for being industrious. Six years ago he bought this land for \$15 an acre and today he is offered \$40, still his taxes remain the same. In other words, he is getting a bonus both from the community and the county for letting the weeds grow

and the fences come to pieces. And there are thousands and thousands of acres held by speculators in this vicinity. The industrious farmer raises the value of land and the idle speculator is reaping the benefit.

But I am not going to bore you with the tenets of the single tax. However, it might interest your readers to hear what the Minnesota Tax Commission, which made a personal investigation in Canada, has to say on the subject:

"The most striking feature in a study of tax reform in Western Canada is the strong trend throughout the entire country in the direction of the single-tax principle. That so far it is

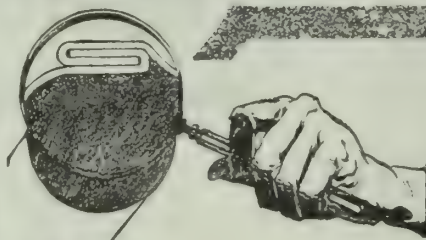
working satisfactorily wherever tried is generally admitted, even by opponents of the principle. In no district in which the principle has been applied is there any noticeable desire to return to the old system. From pres-

ent indications it is safe to predict that within the next ten or twenty years the single-tax principle will be



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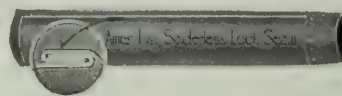
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adopted by every taxing district in Western Canada."

A. P. Currie, assessor of Cloverdale, B. C., in a reply to a letter says, among other things:

"We assess land a good deal below full value. Improved, cultivated land is assessed the same as adjoining unimproved land, and in assessing we do not count as part of the taxable value what the farmer has done by his own labor or by employing labor to improve it. There would be a great protest against that, for it would mean putting a tax upon the farmer for being industrious. As we look at it, a man should be encouraged for his industry rather than be taxed for being industrious and any tax upon what a man produces, or upon any improvement that he makes, is a tax upon his industry.

"It would be very strange if we should tax a man's improvements or in the land itself, for we are inviting thrifty, industrious men to come here, make their homes here and be with us. We do so because we wish to see our community grow and be prosperous. We want to see the thousands upon thousands of uncultivated acres settled upon and put into cultivation and it would be very bad policy to tax men for doing what all of us want done."

And last, but not least, why is it that wherever an attempt has been made to introduce the home rule in taxation in order to apply the principles of the single tax it was, and is today, invariably the rich man, the land speculator, who is fighting such attempt with tooth and nail, and it will take pretty strong arguments to convince us farmers that these men are fighting for the benefit of the poor farmer in particular and the poor in the city in general—"the committee of a local club which gives much attention to economic affairs" notwithstanding. And if the farmers are only half awake they will vote for the amendment.

A. ISAAK.

Lincoln.

[Oh, well; You are magnifying the plan of equalizing assessments into a panacea. It is perfectly possible to assess an unearned increment on land without setting all other forms of property free from taxation. We are getting these other forms under proper tribute by our present system. Why

not work for the improvement of it and make it truer to the principle of equalizing burdens which it embodies? —EDITOR.]

APPROVES THE TAXATION AMENDMENT.

To the Editor: The farmer who uses his brain in farming gets along better than the one who uses his prejudices. The farmer who uses his brain in voting is a better citizen than the one who votes his prejudices. And the farm paper that appeals to the farmer's intelligence on farm questions is a better friend to the farmer than the one that appeals to his prejudices. In your article of April 11, on the "Assembly Constitutional Amendment No. 7," there is more appeal to prejudice than to intelligence.

You speak as if "city dealers in land" are trying to "impose taxation on country lands." Can you name one city land shark who favors this amendment? The big land-owners in the cities are all against it. A millionaire Los Angeles land shark spent money to beat the home rule amendment in 1912, and says he will spend more to beat the one offered this year. Are these land sharks fighting the amendment because they love the farmer and want to protect him?

The California tax system is thoroughly bad. The only redeeming feature of it is the separation of State and local taxation, and even that separating amendment gives an advantage to the big corporations. Having got that advantage, those corporations are fighting the home rule amendment, because they hold great tracts of unimproved land on which they may have to pay higher taxes if the home rule amendment carries.

Now why not take a step that will give us a chance to improve our tax system? The step proposed in this amendment has been tried in Canada and the farmers there like it. It is no longer an experiment but a proved fact. Give the California farmers a chance to try it.

WM. J. VAN ORSDEL.

Chico.

Rooster day, May 16, will be a sad day for bereaved widow hens in Kentucky and Tennessee, for on that day their spouses are to be sold on account

of the great losses in summer time through fertile eggs.

APRICOT SCAB.

To the Editor: What should we do for apricot scab?—A. W.

[Winter use of Bordeaux mixture is the preventive. Spring use may also do good but there is danger of spotting the fruit. The apricot scab is a reddish pustule on the fruit caused by

the shot hole fungus which works on leaves of stone fruits.—EDITOR.]



The Rumely-Olds Cuts Down Costs

The Rumely-Olds gasoline engine is supplying reliable power for hundreds of ranches on the Pacific Coast. No other engine has such a reputation—no other engine has earned it. You need a Rumely-Olds Engine to run your thresher, baler, power pump, saw mill and sprayer.

Rumely-Olds Engine
1½ to 65 horsepower

Here are some of the features that recommend the Olds:

The mixer operates automatically, doesn't depend on heat. Engine will start easily winter or summer.

Cylinder and head cast all in one piece. Cylinders emery-ground to exact size. Simple, automatic governor.

Hopper or tank-cooled, with removable breaker plates. Portable, semi-Portable and stationary mountings.

There is a dealer in your neighborhood who can get the Olds for you and keep you supplied with parts when you need them.

Rumely service is back of every Rumely machine—49 branches and 11,000 dealers—supplies and repairs on short notice.

See your nearest dealer about the Olds and ask for catalog No. 344.

RUMELY LINES

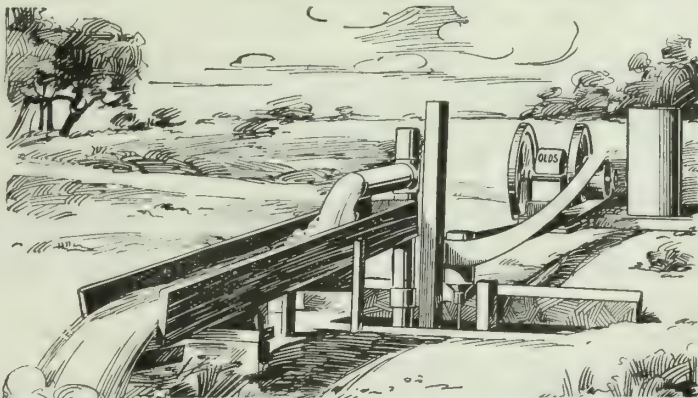
Kerosene Tractors	Threshing Machines	Cream Separators	Road Machines
Gasoline Tractors	Corn Machines	Feed Mills	Grain Elevators
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of every description for Market Gardener, as well as the Home Garden. Sweet Potato Plants now ready.

Ask for our Catalogue and 'Hints on Gardening'—Free. It contains a Coupon worth 25c to you.

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Stack Your Hay and Alfalfa

Have you ever lost a crop of hay through musting—or your barn and hay through spontaneous combustion?

There is one sure way to prevent this—

USE SALT

when you stack the hay.

The salt more than pays for itself in the weight of the hay. There is a further gain in weight through moisture held—and the stock will eat up salted hay clean where unsalted hay will be mussed over and wasted

20 pounds of salt should be used to each ton of hay. Stack three feet of hay, sprinkle the salt over this by hand. Then another layer of hay, more salt, and so on.

IT PAYS

Experiments carried out at the Wisconsin experiment station indicate that salt should be supplied to dairy cows unless the ration furnishes a sufficiency thereof. It is calculated that the minimum quantity in the food to keep a cow of 1000 lb. live weight in flourishing health is that which is equivalent to ¾ oz. of salt per day, and that a cow in milk needs as much more as will restore the proportion removed in the milk, namely, a little over ½ oz. of salt for every 20 lb. of milk.

Iron for Yellow Leaf.

To the Editor: In your issue of April 27, 1912, there is an article under the caption: "Can you iron out yellow leaf", from a bulletin issued by the Experiment Station of Porto Rico, by P. L. Gill.

In summing up, the following paragraph states that, "In curing the chlorosis (in pineapples) fertilizers

were ineffective, but treatment of the leaves with solutions of iron salts, or crystals of ferrous sulphate applied to the roots was effective, and induced a normal growth, but this treatment does not appear to be commercially feasible."

Will you please explain the meaning of iron salts? Does it mean fer-

rous sulphate diluted in water, the same chemicals applied to the roots in crystals or is there another chemical known as iron salts for application to the leaves, or does it simply mean that sulphate of iron is to be sprayed in solution on the leaves and the crystals are to be applied to the roots?

I wish to try the experiment on some chlorotic orange trees, analysis shows plenty of iron in the soil, so I wish to spray the leaves and branches with the iron salts if you will please tell me how many pounds I can add to the spray tank of 200 gallons of water. I am going to spray some orange trees showing scale with a 10% kerosene solution combined with the iron salts. Would these ingredients mix well or would any adverse chemical action result in combination of these two chemicals?—SUBSCRIBER, Porterville.

[A salt of iron is any combination of iron as a base with an acid; there is no specific material called "salts of iron"; there are many of them, of which "copper" (ferrous sulphate) is one. Probably the addition of a soluble salt of iron, like copperas to the water used in making kerosene emulsion would knock out the emulsion by combining with the soap, making an insoluble iron soap. Besides for the specific test of the effect of iron which you desire the iron should not be applied in a mixture but by itself so that any noticeable result shall not be in causal doubt because of other things also applied. Again, you should apply the iron to a limited number of trees, leaving other trees similar in condition and situation untreated, so that you will have something definite to measure by in reaching conclusions. Do not by any means take the chances of defoliating your trees, either, by spraying with iron sulphate solution, without trying it out on a single tree. It is known to be rather fierce on foliage. We have looked up the full report for which you quote above and do not find definite account of the strength of the spray used. If we were starting an experiment we should begin with two pounds to 50 gallons of water and see what happened, before going farther. Application to the soil is much safer. You can use two pounds of the "salt" to the tree widely scattered and to be dissolved by subsequent irrigation.—EDITOR.]

ing so butchered, but finally it begins to show the results. All injuries and large cuts should be cut out smooth and clean in the first place and covered. If the trees have been neglected in the past and are gumming badly, but still worth saving, all the dead bark and wood should be cut out to healthy wood and the cut surface disinfected with Bordeaux paste. After this is dry the wound should be covered with paint or shellac.

THE BIG-LEAFED MAPLE COMMENDED.

I have sent you by today's mail a twig, leaf, and blossom of a tree, which I wish you would determine for me. The small plant or tree was taken out of the Tule river bed last year, the seed probably was washed down from the mountains, as there is nothing resembling it growing down here on the river bottom. It seems to be a very rapid grower and should make a very desirable shade tree where a deciduous tree is wanted. Any information you can give me will be very thankfully received.—A. G. SCHULZ, Porterville.

ANSWER BY DR. W. L. JEPSON, UNIVERSITY OF CALIFORNIA.

The twig is from an individual of Big-leaf Maple (*Acer macrophyllum*), often called California maple or Oregon maple; both names being in the trade. This native maple grows along streams in the mountains and is a highly desirable street tree in loamy or sandy soil which is not too dry. In cultivation it is remarkable for its rapid growth, clean habits, hardness and resistance to wind-breakage.

KILLING BERMUDA GRASS.

To the Editor: It has been demonstrated that an excellent way to get rid of a few small patches of Bermuda grass, is to cover them with tar paper in the summer, when the days are hot, throwing dirt around the edges to keep the air out. Tar paper absorbs the heat. Thus under the paper it is a good many degrees hotter than above. Consequently in only a few weeks the Bermuda grass is smothered to death. W. D. GUTHRIE.

Select New Crop MELON SEED

Black Seeded Chilian.....\$1.00 per lb.
Angeleno—very early..... 1.10 per lb.
Tip Top—Muskmelon (very fine)..... 1.00 per lb.
Rocky Ford (select)..... .90 per lb.
Postpaid.
Other High-grade Seed at "Low Price and No Price Can Buy Better."

WEST COAST SEED HOUSE

114-118 E. 7th Street, Los Angeles

FLORIDA SOUR ORANGE SEED BED STOCK.

Grown without shade; they transplant much more successfully than shade-grown trees. We have the largest and best stock of seedlings as well as a good stock of Navels, Valencias, Eureka Lemons, and M. S. Pomelos. Send in your orders; now is the time to plant.

SOUTHLAND NURSERIES,
F. H. DISBROW, Propr.,
2141 E. Colorado St., Pasadena, Cal.

10c brings you "Gleanings in Bee Culture" for 3 months

Bees make orchards pay better. We make this Special Trial subscription offer just to acquaint you with the standard bee journal. Full of hints on the healthful and profitable pursuit of bee keeping. Book on "Bee Supplies" sent free with it. Send stamps or silver in envelope at our risk.
The A. I. Root Co., Box 158 Sutter St., San Francisco, Cal.

Notice The Rivets?

The rivets on "Western" Surface Irrigation Pipe are what make it the strongest and most dependable irrigation pipe on the market to-day.

"Western"

Surface Irrigation Pipe will save you big money on your pipe bills because the rivets and soldered seam greatly minimize the possibility of leakage.

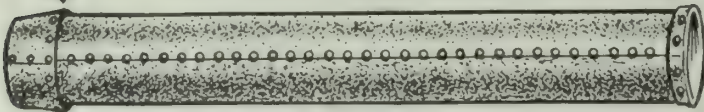
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for full information about this wonderful and economical pipe. It will pay you.

We make Riveted Water Pipe, Riveted Well Casing, Steel Tanks and Irrigation Supplies

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In solid lengths 10 ft. 6 in.

The Use Of Hercules Dynamite On Farm, Orchard and Ranch

Dynamite is not a Jack-of-all-trades. It will not in all cases take the place of tools you are now using. Sometimes it can only be employed as a supplement to them. But most of the work usually done with a spade or an axe, a pick or a bar, can be done more quickly, more cheaply and more thoroughly with dynamite.

When you have a tree to fell, a ditch to be dug, land to be drained, stumps or boulders to be removed, logs to be split, a well, a cistern, or a cellar to be dug, or more important still, trees to be planted or land that needs sub-soiling, use *Hercules Dynamite*.

It would be worth your while for you to write for "Progressive Cultivation." It gives complete information on how and when to use dynamite.



HERCULES POWDER COMPANY,
Chronicle Bldg.
San Francisco, Cal.

Please send me a free copy of your book,

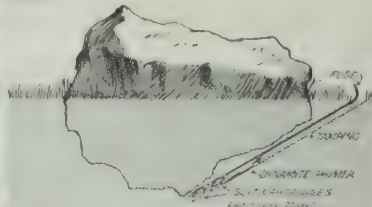
"Progressive Cultivation."

I am interested in Dynamite for

Rock Blasting

The quickest and cheapest way to clear land of rocks is by using Hercules Dynamite. A few minutes of preliminary work in setting the charge and then the rock is instantly broken into many small pieces that may easily be removed.

There are three methods used in rock blasting—snake hole, block hole, and mud capping. The illustration shows the first. Full details regarding this, and the other two, are given in "Progressive Cultivation."



CORRECT METHOD OF BLASTING BOULDER BY SNAKE HOLE

Ditch Making

No other method can equal the use of Hercules Dynamite for general irrigation and drainage work. By changing the course of a stream acres of useless land are often reclaimed. Two men can usually do such work in a few hours' time with Hercules Dynamite. Without it a gang of laborers would require several days.

In "Progressive Cultivation" there are interesting details given about work of this kind.

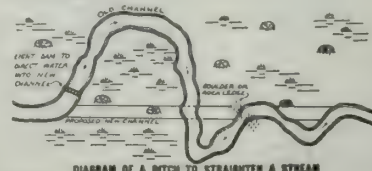


DIAGRAM OF A DITCH TO STRAIGHTEN A STREAM

Dried Fruit Will Be High.

There will be money in some fruit growers' pockets because of the following warning, issued by President R. C. Kells, of the California Cured Fruit Exchange. Mr. Kells receives reports from each of the 25 associations, as well as from the agents of the Exchange, in the markets of the United States, Canada, and Europe, showing the condition of crops on the one hand, and of the markets on the other.

European prune prospects cannot be adequately foreseen and reported till June 1 to 15. Authentic reports of the Oregon Italian prunes were not yet in on April 24. The California apricot prospect was for a normal crop on that date.

"I must inform you that the prune crop conditions are serious. From the best estimate we get at this time, must say that there will not be more than one-fourth of a normal crop. Packers, no doubt, will have a tumbling match with each other, trying to secure the tonnage they have sold on early sales, which, as they have told us, they were selling early as well as buying early.

The California Cured Fruit Exchange has contended from the beginning of the blooming season that it was not good business to sell prunes or any other variety of fruit at blooming time. We would advise the growers to hold their dried fruit until there can be some reasonable estimate made as to crops. By doing this, we stay away from the gambling feature.

With prunes such a short crop, prices high and sure to go higher, peach growers may expect this to be a year when they can get at least the cost of production—we hope better than the cost of production—for, are they not entitled to some profit on their orchard investment and labor in handling the crop? Provided the growers' peach crop is good, say 5 to

6 tons green or one ton dried to the acre, his costs, made up of interest and taxes, depreciation, cost of pruning, spraying, cultivation, gathering, and drying, will figure very close to \$100 per acre, or 5c. per pound for his dried ton; 6c. per pound for his peaches will be only \$20 per acre on his investment, and he will need a good number of acres to pay him a decent income. Where will the grower get off who sells his dried peaches for 4 to 4½c. as some have, and how much have growers lost who have sold their peaches in past years at 3 to 4c.? Perhaps it was the losing game they have been playing that caused our growers to organize for co-operative handling and marketing.

Reports from Eastern and European markets are that stocks of dried fruit are generally light; so coming onto a bare market, with a scant prune crop again, there is opportunity for growers this year to get a profit on their apricot and peach crops if they will hold for right prices. We will be glad to hear from growers who have interest in this movement for co-operative marketing."

The first association of what is now an affiliation of local associations called the California Cured Fruit Exchange, was organized in December, 1912. The idea gained ground slowly on account of the complete failure of the prune organization a few years ago, but the Exchange now has 973 members in 25 locals, and expects to grow until it has united the growers of 75% of dried fruit tonnage.

Of the 1912 dried crop, which the packers almost refused to handle at any price, the Exchange sold several hundred tons in 1913 according to Mr. Kells, and over 10,000,000 pounds of the 1913 crop have been sold.

Each local association has a president and secretary, and a representative, who meets those from the other associations the second Tuesday in each month in the Sacramento office of the Exchange. It is there that they discuss, with the general manager and the sales manager, the selling policies for the next month.

Each association receives a bulletin or two per month from the manager, telling the developments of the crops and of the markets, especially whenever any sudden change occurs. All orders to whomever they are sent within the Exchange, are turned over to the sales manager who was for some years an eastern fruit broker and has selected as eastern Exchange agents those known to him personally as live wires. The Exchange does the selling, in carlots only; and the accounting and is in position to prevent the petty impositions that have often been practiced on individual shippers.

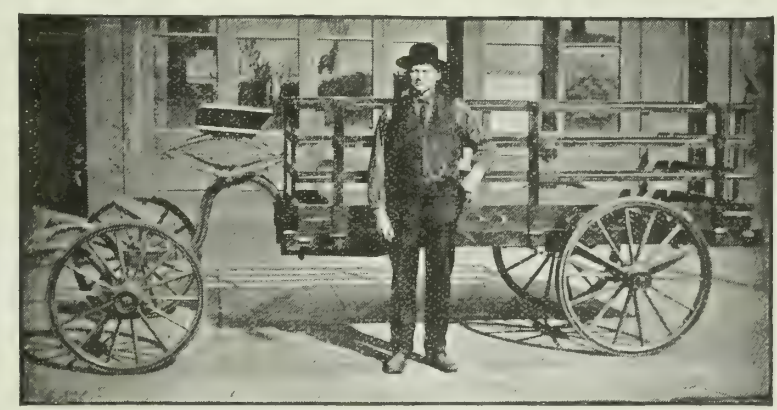
Owing to the uncertainty of prunes, none of the 1914 crop has yet been contracted by the Exchange, but peaches are being sold at a price that will return the growers 5c. after all selling expense is paid. For high grade dried peaches better prices will be obtained—lower grades may even be less.

The final report and complete returns to the growers will be made the first week in May. Two men were expected to do the accounting for the Exchange, but it grew so fast and did so much business that the system devised for small business couldn't keep up. With such a large number of members selling four or five sizes of

prunes each, and the local associations not keeping these differential accounts, the complete reports have been delayed, but will soon show financial results of which the president feels proud.



JR. MONARCH HAY PRESS, baling most of the hay on the Coast.
Operated either by horse-power or gas engine.
CAPACITY 95 TONS PER DAY. WRITE FOR INFORMATION.
JR. MONARCH HAY PRESS CO., San Leandro, Cal.



One of the many styles and sizes of Fruit Trucks I manufacture. Sixteen years of experience has taught me how to make trucks that will stand the hard knocks and that will last. For prices and further particulars, address
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Write us now concerning
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Rhubarb and Cactus

Pay better than anything you can plant. I can supply any quantity desired; prices reasonable. May, June, and July best time to plant.

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BURBANK SPINELESS CACTUS
Guaranteed Forage and Fruiting Varieties. Lowest Prices.
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THE STANDARD OIL
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We therefore recommend Zerolene not merely as a good oil, but as actually *the best motor oil we can make*. It is giving satisfactory service to thousands of motorists. It keeps the motor cool by perfect lubrication; cuts down repair costs and lengthens the life of the car.

Dealers everywhere. Ask
our nearest agency about delivery in bulk.



Standard Oil
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(CALIFORNIA)

AGRICULTURAL REVIEW.

Present Fruit Prospects.

Since our first crop report, in the issue of April 18, there have been many changes in the crop estimates due to the heavy dropping in most of the larger fruit districts since that time, and the present indications are that the crop will be much smaller than was thought possible then.

From Linden, San Joaquin county, a subscriber writes that, instead of a 100% crop of all deciduous fruits, as reported to us April 7 by William Garden, county horticultural commissioner, the report should now read: almonds, 50%; apricots, 75; peaches, 100; prunes, 50; and cherries 50%. He also stated that the San Joaquin County Farm Bureau think that the above estimates on apricots, peaches and cherries are somewhat high.

From a field correspondent, in Napa county, we learn that the French prune crop in that county does not now promise more than 10% of a full crop, and that Sugar and Imperials do not look much if any better. He estimates the apricot crop at about 50% at this time. Muirs and some varieties of cling peaches are showing a fairly good crop, but most of the late varieties were badly damaged by frost. Cherries are also spotted, the earlier varieties showing a better prospect than the later ones.

A field correspondent states that the almond crop on the ranch of A. T. Foster, near Dixon, Solano county, is practically a failure. This is one of the largest almond orchards in that vicinity. There are, however, some orchards in that section which promise a good crop, a significant fact being that such orchards blossomed earlier or later than normal.

D. F. Norton, of Nevada county, writes that Bartlett pears now look to be about 90% of a full crop, Winter Nellis 75%, while other varieties will be full. Apple crop is good and will require thinning, the peach crop is the neaviest ever, and apricots and almonds away above normal.

In a communication dated April 30, issued by the State Horticultural Commissioner, we find that the eleven largest apricot producing counties in the State average 74½% of a full crop instead of 78½ as before reported; the 10 largest prune counties have an average of 33.8% of a crop instead of 68 as before reported; the 12 largest peach counties have an average of 83% instead of 93; the five largest pear counties have an average of 56% instead of 86; the 7 largest almond counties have an average of 52% instead of 81; and the 11 largest cherry counties have an average of 54% instead of 85. As the bulk of the above fruits are grown in the counties tabulated, the above estimates may be safely used as a criterion of what the crops then appeared to be in the State, although later developments may show a considerable change from these figures.

Grain Report Good.

The following reports from various points in the State indicate that bumper crops of grain will be harvested in almost every section: Bakersfield reports state that it now seems certain the county's grain crop will be fair to good, with a slightly larger planting than usual. San Diego county reports that the late rains have damaged the grain hay crops in that

section materially. San Joaquin county reports that little hay is being cut on account of the favorable outlook for grain, which promises a heavy crop. Chico reports state that the 11,000 acres of beet land which were planted to grain this year promise a heavy yield. Tulare county reports state that there will be a heavy yield of grain on the Tulare Lake lands and that much of the land heretofore flooded will produce good crops this year. Reports from Los Banos state that the largest harvests of barley which have ever been gathered in that section will be reaped this year.

Reports from Oregon state that while banks, railroads, and wheat buyers have not as yet begun to get reports, it is confidently predicted that the crop will be 53,000,000 bushels or more. Winter wheat in Oregon is reported as being three weeks ahead of what it was at this time last year, and a splendid crop as well as barley and oats seems assured.

Reports have it that 1,250,000 tons of wheat and barley will be harvested in California during 1914.

Vegetable Doings.

Asparagus shipments from Oakley, Contra Costa county, are now about finished, a report from that place stating that the Miller-Cummins company has shipped about 100 cars this season, which is 30 cars more than went out from that place last year.

Pea canning operations were started last week by the Pacific Pea Packing Co. at the plant near Oakdale, Stanislaus county. The pea crop in that section is said to be excellent as well as the prospects for tomatoes which have been planted for canning purposes.

Casaba growers in the Strathmore section of Tulare county are planning on forming an association for the distribution of their melons. It has been proved that these melons can be successfully grown in that section.

The first gooseberries received in the San Francisco and Los Angeles markets this season were shipped by E. C. Hall, of Greenfield, Monterey county. These shipments also have the distinction of being the earliest of that berry ever received in the San Francisco markets.

Carload shipments of onions will be started from Stockton during the fore part of this week, according to advices from that place. The acreage this year is about 3500 as compared with 3000 acres last year, and the crop is said to be heavy. Prices will likely be good, as the Texas crop is lighter than usual.

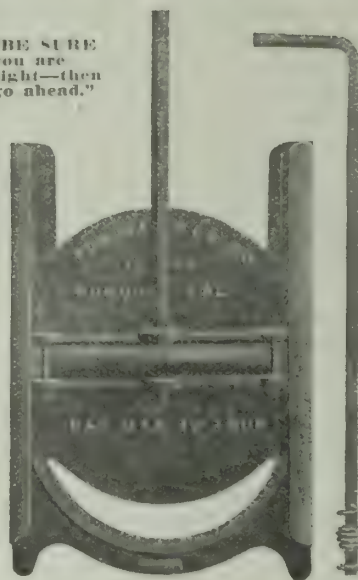
Citrus News.

While it is still too early to tell accurately the success of the treatment, Horticultural Commissioner Collins is very enthusiastic over the results of an oil-emulsion spray that is being used in the citrus scale campaign in Tulare county. Prof. H. J. Quayle, of the University of California, recently stated that he will furnish a trained entomologist this summer who will make a study of the life of the scale.

Citrus shipments fell off some for the week ending May 1, from Riverside, the total for the week being 141 cars of oranges and one car of lemons. This brings the total for the season up to about 2400 cars. The

IRRIGATORS

"BE SURE
you are
right—then
go ahead."



Take no chances with untried irrigation appliances. Use those that have "made good" and are making good in the principal irrigation districts and be safe—not sorry.

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is a vital necessity where water is delivered through one service pipe to different levels. It is the best and most practical gate on the market—because simple in construction, cheap in price and as durable as solid iron. Locks absolutely water tight when closed, can be easily, quickly and perfectly regulated. Has no rubber or wooden facing to rot or wear out.

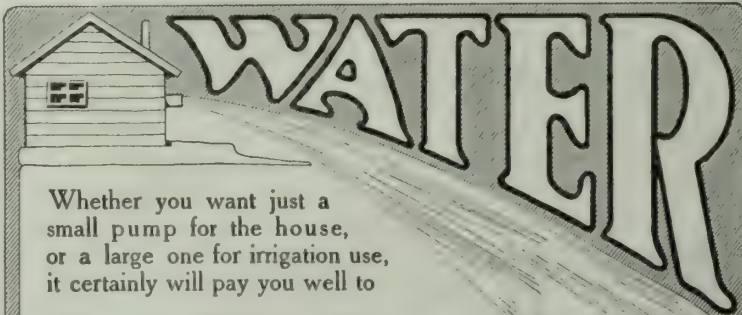
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MAKERS OF THE FAMOUS POMONA DEEP WELL PUMP.

Insist on "Pomona"
GATES AND VALVES



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The safe way is to get advice from pump specialists like ourselves. As manufacturers we have solved hundreds of pumping problems—and our accumulated experience is at your command. Our advice may save you both money and trouble. We manufacture and sell

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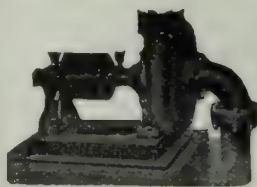


Let us help you select a pump adapted to your particular requirements. CATALOG 28-B describes Bean Centrifugal Pumps. CATALOG 28-D describes all other pumps (also Bean Distillate Engines). A postal will bring either or both. Why not send now?

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PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make. Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

300,000 FIRST-CLASS ORANGE SEED BED STOCK.

Ready for delivery. Genuine Florida Sour Stock. Sweet Stock grown from carefully selected California seed. Clean, vigorous and thrifty. Correspondence solicited.

LOCKE NURSERIES,
C. H. HARLE, Mgr.

Home Phone 654-J.

27 N. Olive St., Alhambra, Cal.

recent rains interfered somewhat with picking, but the fruit is holding up well and arriving in good condition. Reports from Florida are to the ef-

fect that the 1915 crop in that State promises to be extra large at this time, and that if there is no calamity and the fruit already set can be marketed, the crop will amount to at least 10,000,000 boxes.

CITRUS TREES

Don't procrastinate—place that order with **TEAGUE** now.

Some planters are putting off buying, imagining that prices will get lower or conditions better. Neither will happen. Prices are now at their lowest ebb. Conditions are splendid for planting.

Write today for our prices and quotations.

ALL STANDARD SORTS

Oranges—Lemons—Pomelos

Our trees are truly pedigreed stock. Ask any man who has ever planted a Teague orchard.

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ESTABLISHED 1890
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Improved Fruit Pitting Machines



CAPACITY:

APRICOTS, 1 ton per hour.
PEACHES (freestone), 2 tons per hour.

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SAN FRANCISCO LOS ANGELES
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HOT AIR won't burn.
A pure Gas will.

LOOK! LISTEN! to what this doctor has to say.

"To any to whom this may come. I am glad to say that after a two years thorough test of the 'Blue Flame Distillate Gas Burner' I am very free to recommend it as all O. K. and especially suited to our California climate both for good service and economy."

DR. J. R. TOWNSEND,
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Nuff said; we have many others as good and better. If you are interested, write for our pamphlet.

Blue Flame Distillate Burner Co.,
330 Mountain View St., Pasadena, Cal.

During the early part of this month the Board of Regents of the State University will decide upon the location for the proposed citrus experimental station. San Fernando and Riverside are the two sites that are being considered.

Fair Dates Announced.

The following dates have been set by the Association of California District Fairs for the coming fair season: Santa Rosa Fair, August 31 to September 15; Woodland Fair, September 8 to 10; Sacramento State Fair, September 12 to 19; Pleasanton, Alameda County, Fair, September 23 to 26; Fresno Fair, September 29 to October 3; Hanford Fair, October 5 to 10; Riverside Fair, October 6 to 10; Los Angeles Fair, October 12 to 17. Added interest in the "district fair" proposition is being demonstrated in many parts of the State, and it now seems probable that they will all be more successful this year than heretofore.

Olive Sprouts.

Over 90% of the olive crop of the Lindsay district of Tulare county has been signed up by the recently organized Olive Growers' Association, and high prices are expected for the coming year's crop.

An Olive Growers' Association for central and northern California was organized recently at Marysville, with G. W. Harney, Yuba County Horticultural Commissioner, as secretary, and Richard Deener, of Red Bluff, as president. Its object is to develop all branches of the olive industry by spreading information as to the suitability of the Sacramento valley and foothills for olives and as to proper methods of cultivation and handling. That interest is keen is shown by the fact that in Yuba county alone, where peaches, grapes and pears heretofore had practically no competition, 10,667 olive trees were imported and planted up to March 31, 1914, while 90,000 cuttings for nursery stock were brought in the first three months of 1914. The only variety recommended by the new organization is the Mission.

With the Shippers.

The Interstate Commerce Commission has just handed down a decision regarding the shipment of commodities from California terminals to Eastern destinations, in which it held that the articles could be shipped in "fiber board, pulp board, or double-faced corrugated strawberry boxes," although the shipper should be held responsible for any violation of the rule with respect to the construction, packing and sealing of the fiber boxes.

Hop Sales.

John L. Peterson, of Santa Rosa, sold last week 180 bales of hops to George A. Proctor, for 16c per pound. It is reported that the same buyer has contracted for 150 bales of the 1915 crop Sonomas at 15c per pound.

Storage Egg Situation.

W. R. Humphrey, who is special agent for the federation of Sonoma county poultrymen, announces that there are a total of 53,460 cases of eggs in storage in San Francisco, Santa Rosa and Petaluma at this time, as compared with 41,646 at this time last year. He states that over 8500 cases of Chinese eggs have been stored

in San Francisco and that Vancouver, Los Angeles and Seattle report heavy storing of the imported eggs.

Advisers In Nevada.

A movement is being started by the Agricultural College of Nevada to establish farm advisers in the agricultural counties of that State, the same as is now being done in California and other States.

Fighting Pear Blight.

The pear blight is said to be very bad in the pear-growing districts of the Sacramento river-bottom lands, and growers in that section are busily engaged fighting the pest by cutting out and burning the affected limbs.

Nurseries Damaged.

Reports from the Sacramento valley state that the recent heavy north winds which visited that section did considerable damage to nursery stock, and especially was this true in the district around Chico, where the Chico Nursery, as well as other small nurseries, were badly damaged.

On account of the quality of the tobacco grown last year near Grass Valley, Nevada county, W. B. Schrader, a representative of the Kona Tobacco Co. of Honolulu, recently visited that district. Local men are planning on planting over 1,000 plants this year in an endeavor to more thoroughly demonstrate the practicality of this crop in that district.

The first annual meeting of the Lindsay Olive Growers' Association was held recently, at which time it was proposed to take steps toward the establishing of a pickling plant at that place.

CITRUS TREES FREE

2,000 Villa Franca Lemons, 7/8 up
1,000 Marsh Seedless Pomelos, 7/8 up
25,000 Washington Navels, 1/2 up

Budded from choice heavy-bearing trees; must sell within 30 days.

Will give free, 25 Marsh Seedless Pomelo Trees with every 1000 tree order; all budded in Florida Sour Stock; no better trees in the State.

If you want choice trees at very low price, write me at once. Trees delivered free at your railroad station.

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BOX 23, LEMON COVE, TULARE CO., CAL.

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Wagons and Implement Materials

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15% stronger than second growth Hickory. Better and cheaper than any other hardwood. Makes most beautiful veneer for panelling.

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Seed of "San Jose" Eucalyptus for sale.

ORANGE SEED

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Do you put off answering letters, and dislike to sit down and write? Are you dissatisfied with the looks of your letters? Our new low priced home model Blickensderfer Typewriter will make letter writing easy. Better send for our proposition C today.

C. H. JENKINS CO., Inc.,
General Agents:
114 Bush St., San Francisco.

Constructive Agriculture—No. 18.

MOVING THE EARTH QUICKLY AND CHEAPLY.

[Written for the PACIFIC RURAL PRESS by W. H. SCHRADER.]

California leads the world in a great many branches of agricultural pursuits; but there is probably no branch in which our State is so far in advance as in irrigation. Not only have many of the best irrigation methods been evolved here; but much of the best and most up-to-date machinery for the pumping and distribution of water has been the result of the inventive genius of citizens of this State. A very important branch of irrigation is the preparation of the land, because upon this depends both the economy and the effectiveness of the irrigation to follow.

The cost of leveling and checking land for alfalfa has heretofore been great, often running as high as \$40 or \$50 per acre. In addition to the great cost, the length of time required has been a serious drawback. So much so that it was almost impossible to prepare a large area so that it might be seeded the same season.

A. B. Humphrey of Mayhews has a

grades for the ditches in just thirty-three days. In conjunction with this I had three or four teams which followed up and did the small work not practical with so large a machine.

The advantage gained was not only in cost, but also in time. Conditions in the neighborhood were such that had it been possible to procure teams, the work could not have been completed in time to plant the land before next year.

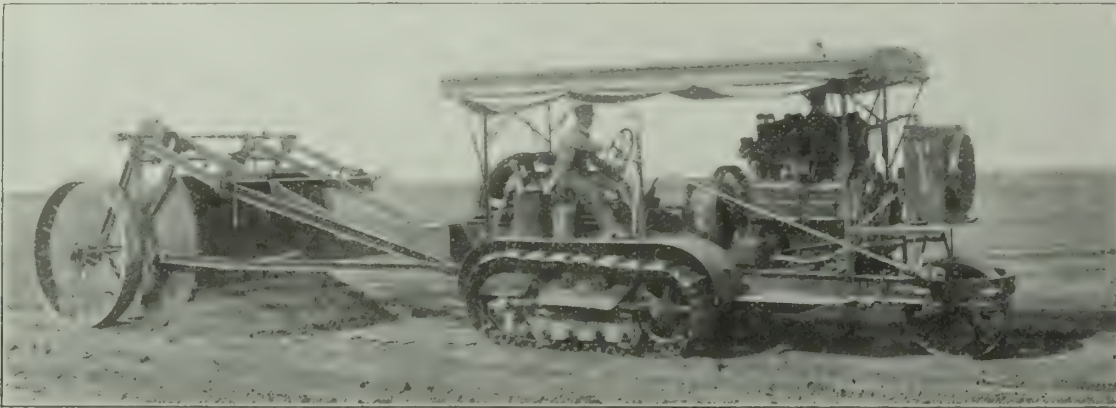
COMPARATIVE COST.

"As an illustration of the comparative cost: In one case I found it necessary to fill a hole 200 feet across each way and about 18 inches deep in the center, drawing the dirt an average haul of 400 feet. We filled this hole at an expense of approximately 6½ cents per yard. It is not practical to haul dirt that distance with horses, but if such had been used the expense would likely have been more than 20 cents per yard. In another case we built a grade to locate a ditch, about 600 feet long, 24 feet wide, averaging about 18 inches high, pulling the dirt

with an automobile. The 'new way' is going to save the farmers and irrigators enough to put a big impetus into developing irrigation quickly."

This Giant Scraper used by Mr. Humphrey seems to have solved the problem of moving at a reasonable cost the vast quantities of earth necessary to prepare much of the land in this State for economical irrigation. In actual working conditions in the field this machine has demonstrated that it will move more earth in a given time at a lower cost than any other machine ever devised, not even excepting the great dredgers in our rivers. This machine will make it possible to bring under irrigation thousands of acres of land where the cost would be prohibitive if done with ordinary scrapers drawn by horses.

The manufacturers of this Giant Scraper, the Schmeiser Manufacturing Company of Davis, have given to the farmers of California many other labor and cost-saving devices. Their portable derricks, almond hullers, equalizing hitches, land levelers and checkers, etc., are well known and in use throughout the West. The Schmeiser portable derricks are now in such common use throughout the hay producing sections of this State as to be an essential part of the



Holt Caterpillar and Schmeiser Giant Scraper.

piece of land near Escalon, a little over 100 acres of which he seeded to alfalfa this spring. Mr. Humphrey's main problem was to get the ground prepared in time, though the item of expense was a weighty consideration also. How he solved the problem is best told in Mr. Humphrey's own words.

"The estimated cost of \$20 to \$40 per acre having been gained by actual experience in leveling several hundred acres with teams, I decided to try out the contentions of the manufacturers of some recently invented machinery for that purpose, upon about 100 acres of land in one of the new irrigation districts. The claim being made that more than one-half the cost over old methods could be eliminated.

GIANT SCRAPER USED

"The principal machine of the set consisted really of a giant scraper similar to a Fresno four-horse scraper, except that it is mounted on wheels. It has a capacity of seven yards of dirt, so that loaded it really carries as much at a load as twenty-one Fresno scrapers. It was pulled by a sixty-five horsepower tractor engine, which easily pulled the load.

LAND READY IN RECORD TIME

"With this machinery I leveled or smoothed off the ground, built the borders to hold the water, built the

an average haul of 200 feet. We did this piece of work in nine hours at an estimated cost of 5 cents per yard.

BORDER ATTACHMENT USED.

"We also built the borders with an attachment supplied with the machine, for that purpose, in just one working day. On that kind of work the machine did even more proportionately than on the other work. It would have required no less than forty teams to have done that work in the same time.

The regular rental price for four-horse scraper teams with driver, where everything is furnished, is about \$7 per day. The advantage of the machine is easily understood when these figures are compared.

NEW WAY TO GIVE IMPETUS TO IRRIGATION

"As I did not own the tractor, the cost in my case was based on an expense of \$40 per day, which included the daily rental charge for the engine. If a tractor were owned by the landowner, the expense of running plus the interest and upkeep would not be nearly as much as the rental charge, and these estimates could be considerably lessened.

Compared with the old method of leveling land with horses and scrapers, the only illustration that I call to mind is a busy man doing business with a horse and buggy as compared

typical California haying scene. They are used for a great variety of work besides handling hay. The equalizing hitches are a necessity in hitching the 25 to 30 horse teams which haul the combined harvesters, making every animal do his share of the work. The land leveler and checker, although on the market less than a year, are already extensively in use. They are used where the land is comparatively level, while the giant scraper is required for uneven, broken or hog-wallow land.

The head of Schmeiser Manufacturing Co., T. G. Schmeiser, is himself a direct product of California farming. He was a farmer for many years before engaging in the manufacturing business, and it is his experience as a farmer, coupled with his inventive genius, that has enabled him to devise labor-saving implements for farm work. Though the business takes up most of his time now, he still owns and farms some of the best land in the State, adjoining the University Farm at Davis.

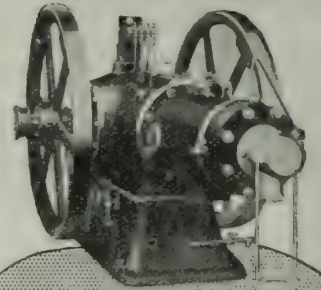
A VALUABLE ORANGE GROVE.

[Written for the PACIFIC RURAL PRESS by A. A. WENDELL.]

You couldn't buy John McGee's orange orchard for \$5,000 per acre. I do not believe you can find a better producing citrus belt in the whole

State than is here at Whittier. John McGee of this place picked 6,500 boxes of valencias from four acres of 23-year old trees last season. Some of the large trees yielded 40 boxes each.

He permits the branches to touch the ground all the way around. He hasn't plowed his orchard or dug around the trees for seven years, though he cultivates continually and very deep. About 20 pounds of commercial fertilizer per tree and plenty of farm manure for humus is applied.



Muncie Oil Engine

10 to 80 H.P.
The only engine in these sizes successfully operating today in California on California Fuel Oil

Don't let the failures of other so-called oil engines prevent your full investigation of the Muncie

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IRRIGATION MACHINERY
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CROP INSURANCE **MOTORS**

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Miller Horizontal Automatically Water Balanced Enclosed Runner Ring Oiling Direct Connected Pumps make ideal pumping units. Built and guaranteed for all heads and capacities

Don't wait until your crop is dead but write us NOW and ask for catalog and information blank. We are experts and our experience is at your command.

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SECOND HAND PIPE

Very best quality of selected second-hand water pipe and standard screw casing pipe. For quality and low price you make no mistake when buying water pipe of the Weissbaum kind. Largest pipe works in the west.

WEISSBAUM PIPE WORKS,
160 Eleventh St., San Francisco.

Pointers From Late Bulletins.

Less Water, More Land, Larger Yield.

"The acre-inch yield is largest with the smallest quantity of water" per acre, according to a Utah bulletin. In a specific instance repeated in general results with other crops, 30 acre-inches of water used on one acre produced about 7,000 pounds of dry matter in the form of wheat and straw while the same amount of water spread over six acres (1/6 as much per acre) yielded about 30,000 pounds decreasing the yield per acre, but quadrupling the yield per acre-inch of water. This is worth figuring on where desert land is cheap and water expensive. With sugar beets the difference was less, while with alfalfa it was much greater.

Getting Grain at Expense of Straw.

A Utah experiment in irrigation showed that by use of 3.5 inches of water, applied when wheat was filling out the heads, three bushels more wheat per acre and 461 pounds less straw were produced than where applied earlier, about the middle of June, before heading.

In another series of experiments, 6.5 inches of water applied in two irrigations gave 2 bushels per acre more than the same amount applied all at once.

"In the third series, 7.5 inches were applied in two irrigations, but in three different ways: first, in two equal irrigations; second, one light and the second heavy; third, one heavy and the second light. The largest yield of grain was obtained when the water was applied in two equal irrigations; the next highest, when the lighter irrigation came first. The yield of straw varied in just the opposite manner, being smallest when the water was applied in two equal irrigations, and the largest when the heavy irrigation came first. This goes to show that the effect of the manner of application was to increase or decrease the ease with which the materials stored in the stalks can be carried into the heads. When it is considered that the grain has a much higher value, pound for pound, than the straw, any method of irrigation that will enable the farmer to increase the grain at the expense of the straw becomes exceedingly important.

Correspondence Lessons from the University.

Free correspondence courses in agriculture by the University of California. Circular 113 describes 32 of these, fifteen of which are ready now. These are on the subjects, alfalfa, onions, barley, dairying, swine, sheep, beef, poultry, bees, walnuts, grapes, citrus fruits, olives, figs, and home flowers. Postcard application for enrollment brings the first two lessons.

Retailing Scientific Knowledge.

A factory with retail agents piles up its product where it is of no use: an experiment station, whose expenses are paid by the people, without a farm adviser, piles up the results of its costly experiments in bulletins which are little read or if read, but little applied. The farm adviser is the Experiment Station's retail agent, Circular No. 112 of the University of

California tells the advantages of such a retail agent of information and how to get one.

The report of a day's trip with the farm adviser is quoted from the Humboldt County Times. Among other things noted are the following.

An apple orchard on alluvial soil seemed in poor thrift. With an auger, the adviser bored 6½ feet deep before finding moisture. It seems that the farmer hadn't thought of that.

In an alfalfa field he said:

"Never mind the blossoms; pull up a stalk or two here and there in the field and if the shoots are beginning to start it is time to cut alfalfa. If you wait until these new shoots from the plant head get two or three inches above ground your mower cuts them off and you are cutting not only the crop that is big enough for hay but the next crop too."

In a field of kale four feet tall, grown for dairy feed, the dairyman was told to strip off the leaves for feed, but let the stalks stand as they would produce another crop of leaves.

This adviser is the one who thinks nearly all of the farms in his county need lime and has started arrangements to reduce the price of lime from \$20 per ton to \$4.

REVIVING AN ORANGE GROVE.

Most orange groves in Fair Oaks colony, are beautifully kept. A few are outrageously neglected. One of these was acquired a year or two ago by C. E. Weickert. The trees were full of dead wood inside and sticking out. The leaves were yellow and sick. Suckers had run amuck. Grass and weeds covered the ground. The orchard didn't pay.

Henry Hoover was the surgeon. When the amputations were over late last summer, the foliage looked pretty thin and sicker than ever.

He bored a 1½-inch hole about seven feet deep, on each side of each tree last fall. That reached through the hard pan which was commonly 18 inches thick, lying on loose sand. He used two to four sticks of 25% dynamite for each hole.

The explosive knocked the bottom out of the hardpan basin, permitting drainage; and with a living chance, the thin foliage grew thick, this winter, the yellow color turned to dark green, blossoms have come out and the trees promise a heavy crop for the early markets next Thanksgiving.

WANTED HORTICULTURALLY.

A practicable method of keeping a path between rows of field tomatoes.

A way of filling in vacancies left by death of old orchard trees.

Adolph Schnabel of Newcastle wants a blue sour plum as early as the Clyman and good as the Climax for shipment East. A tip for amateur Burbanks.

W. R. Fountain of Newcastle suggests some more fruit breeding work. A peach is needed the shape of the Elberta, early as the Crawford freestone and without the ridge on its side which ripens and softens before the rest of the peach is ready to eat.

White-fleshed peaches are not much wanted in any market. All want yellow-fleshed varieties, though San Francisco takes a few white ones.



Cut Your Harvesting Costs

When your grain is ripe you ought to hustle to get it harvested. With a Caterpillar Tractor hitched up to a Combined Harvester you can do the job quicker and easier than in any other way. Such an outfit will usually cut and thresh 50 to 125 acres a day with five men and no horses, for 50c to \$1.00 an acre.

CATERPILLAR

Reg. U.S. Pat. Off.

The Caterpillar has abundant power and hauls a harvester steadier than horses can. It costs less to maintain than a big camp of horses. It is always ready for use. It is never affected by hot weather; never makes long stops to feed; wastes no time in being hitched up; works in twenty-four hour stretches if necessary—harvesting in the daytime and hauling grain at night.

With the Caterpillar you can safely harvest on any soil. The long, wide Caterpillar tracks distribute the weight of the machine so that it travels easily over loose, wet or ashy soil where round-wheel tractors can not possibly work. And you can use the Caterpillar safely on steep hill-sides. It is built low—you can't upset it on land you can farm at a profit.

Besides harvesting, you can do your summer-fallowing with the Caterpillar. Use it for harrowing, discing, deep plowing.

Two-thirds of all tractor owners on the Pacific Coast are using Caterpillars. They find them easy to operate, cheap to maintain,—big money savers.

Write our nearest branch for Bulletin C52 giving full Caterpillar information and news of our latest improvements in construction; also for catalog of Holt Combined Harvesters.

Everything for the power farmer—harvesters, disc and moldboard plows—harrows, scrapers, supplies.

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Spokane, Wash. Portland, Ore. Peoria, Ill. New York, N. Y.

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Grand Canyon of the Feather River
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Castle Gate
Glenwood Springs

Canyon of the Grand River
Eagle River Canyon
Tennessee Pass
Mount Massive
Collegiate Peaks
Grand Canyon of the Arkansas
Royal Gorge
Pikes Peak

CHOICE OF TWO ROUTES THROUGH THE ROCKY MOUNTAINS

Through Standard and Tourist Sleeping Cars between San Francisco, Oakland, Sacramento and Salt Lake City, Denver, Kansas City, Omaha, St. Louis and Chicago.

Illustrative booklets descriptive of "The Scenic Route to the East" free on request.

E. L. LOMAX
Asst. Pass. Traffic Manager
San Francisco, Cal.

F. A. WADLEIGH
Passenger Traffic Manager
Denver, Colo.

With the Live Stock Men.

A party of dairy cattle buyers composed of men from Washington and Oregon have just completed a trip through all of the larger dairy sections in this State, in search of cattle for shipment, but state that they were unable to find stock anywhere. A local buyer states that there is a bigger scarcity of stock this year than for nine years past.

Dr. A. McDaniel, acting under orders of the State Veterinarian, had five head of horses killed near Gridley last week which were affected with glanders.

Word comes from Cloverdale that M. N. Freitas of Stockton has recently purchased 3700 head of sheep from growers in that section, at prices near \$5 per head. The sheep were sheared before the sale was made. Humbert and Edwards, who were one of the sellers, are putting cattle on their 4000-acre range, located between Cloverdale and Geysers.

According to advices from Cottonwood, Shasta county, there have been over 400 carloads of hogs shipped from that point this spring. The average price has been about six cents. Butchers are still in the field.

W. J. Gugliemetti of Petaluma is soon to install the Hinman milking machines in his 150-cow dairy, near that place. As this is the first Hinman in that section, the success of it will be carefully watched by other dairymen.

G. A. Floore, formerly of Nevada, where he raised sheep, was a visitor to this office last week in search of information about Angora goats. He

stated that he has recently bought a 420-acre ranch in Tehama county and that he expects to go into the goat business in the near future.

Reports from Turlock state that prices paid for dairy stock at an auction sale near there last week were good, 26 Jerseys bringing \$2365. The top price was for one of the cows, which brought \$132.50.

Among those who have recently started in the business of breeding pure-bred Duroc-Jersey hogs, is O. Avery of Porterville, who has recently started a foundation herd.

William Roach of Los Angeles has recently purchased 527 head of beef cattle from the firm of Hayes & Delaney of Livermore, who have also sold considerable stock to other buyers during the past few weeks.

W. H. Holt, State sheep inspector of Nevada, reports that sheep in the eastern part of that State are in good condition.

A shipment of 800 head of hogs and 200 head of sheep was made from San Francisco last week, by E. C. Haney, to Alaska for the Alaska Packers Association. This makes twelve years that Mr. Haney has supplied this concern with their pork.

E. M. Smith of Delano, Tulare county, has made a start in establishing registered herds of Guernsey and Short-horn cattle on his ranch near that place.

At a well attended meeting of the Marin and Sonoma Coast Dairyman's Association, held at Valley Ford, Sonoma county, last week a constitution and by-laws was adopted and a talk made by Prof. C. L. Roadhouse, who talked of the benefits to be derived from organizations of that kind.

A number of horses in the vicinity of Lodi, San Joaquin county, are reported by Veterinarian H. M. Carey to be suffering from nasal colds.

A representative of the Central California Creamery recently made a statement that his company would soon erect a building for the manufacturing of dry milk products in the west side district of Stanislaus county.

The Tulare Co-operative Poultry Association did the biggest business in its history last month, by handling between 3,000 and 4,000 dozen eggs more than ever before. The total amount of business done, including both poultry and eggs and supplies, amounted to \$7781.50.

It now seems probable that the Sacramento Valley Sugar Co. will reopen the refinery at Hamilton City in 1915. The factory was closed down this year due it was said to the revision of the tariff, and the reopening will mean much to farmers in that section who have heretofore leased about 3000 acres to the sugar company for beets. That acreage will be added to next year, it is stated, by a large acreage in Butte and Glenn counties.

Receipts of cattle were not so heavy at the Portland Union Stock Yards last week as for the week previous. A number of cars of prime Oregon and Idaho

Going to Buy A New Separator? Or Exchange your Old One?

If So Write Us About

THE UNITED STATES CREAM SEPARATORS

THE TWENTIETH CENTURY MASTERPIECE

Non-rusting, non-adhesive skimming sections.

Mechanically washed

Small bowl—easier turned. Almost never wear out.

The world's record separator for close skimming in fifty consecutive runs during a period of thirty days and on milk from ten breeds.

WE'LL SEND YOU POSITIVE PROOF of the superiority of United States Cream Separators, gladly, upon request. Write, or call and see us.

Newell Mathews Co.

ESTABLISHED 1886

Implements, Wagons, Dairy Supplies, Road and Grading Machinery.
LOS ANGELES—California—STOCKTON

FIRST SALE OF REGISTERED HOLSTEINS.

GEO. A. SMITH, Corcoran, Cal., JUNE 16, 1914.
125 Registered Holstein Cows, Bred Heifers, Heifers, Calves and Bulls.

One of the most promising lots ever offered without reserve at BIDDERS' PRICES.

Carefully selected individuals fashionably bred that will make big money for the purchaser.

Consider the significance of these offerings as representative of the character of this sale:

Daughter and Granddaughter of Calamity Jane's Paul, whose dam Calamity Jane was the winner of the Milk and Butter Contest over all breeds at the Provincial Dairy Show, Guelph, Ontario, Canada, 4 successive years. Grandsons of Contest Colantha Champion, whose dam holds the WORLD'S MILK RECORDS for each of her first 3 lactation periods.

Granddaughters of Johanna Clothilde Lad, son of the St. Louis WORLD'S FAIR CHAMPION, Sarcastic Lad, grandsire of 3 WORLD'S CHAMPIONS.

Grandsons of the celebrated Pontiac Korndyke, 85 A.R.O. daughters, grandsire of the WORLD'S CHAMPION, K. P. Pontiac Lass, 44.18 lbs.

Daughter, Granddaughter and Grandsons of the 28-lb. sire, Gordon Glen Pontiac.

Granddaughters of the 36-lb. sire, Pontiac Hengerveld Parthenaea.

Grandsons of King Segis Walker K., son of King Segis, 83 A.R.O. daughters.

Granddaughters of the 33-lb. sire, De Kol 2d Mutual Paul.

Many are bred to a son of the best daughter of King Segis, the world-renowned sire, and to a son of Pontiac Korndyke, one of the greatest sires of the breed.

I can continue this list indefinitely and still leave many of the good ones unmentioned.

Make your plans now to attend this history-making event.

WRITE NOW FOR CATALOGUE.

steers went at from \$7.85 to \$8. Choice de-horned cows at \$7 to \$7.25; bulls steady at \$5.75 to \$6. The hog market was weaker at the close, best light swine going at \$8.55 to \$8.60, for extreme tops. The sheep demand was fairly good with light receipts. Grass-fed sheep are beginning to come in. Prices were \$5 to \$6 for grass wethers, \$4.25 to \$4.50 for ewes, \$6 to \$6.50 for wool lambs and \$5.75 to \$6 for sheared.

HORSE BREEDERS SHOULD ATTEND.

The meeting which has been called at the University Farm, Davis, May 16, for the purpose of organizing a draft horse breeders' association, should receive the consideration of every heavy horse breeder in the State, as it is something which has been badly needed for some time. Most of our readers will remember that there was considerable interest worked up along this line through these columns during the winter months, and from indications at that time, we should say that the meeting will be well attended. Prof. Gordon H. True, who sent out the announcements for the coming meeting, writes this office that among others who have signified their willingness to speak at the meeting are Henry

REGISTERED JACKS

12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

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Wheatley of Napa, and D. O. Lively, chief of the live stock department of the Panama-Pacific Exposition, and a

Milk

Are you interested?

You should be, and if you are, we have something that you will need.

We manufacture a large part of our dairy supplies. That is one reason why we save you money. Below is a partial list of supplies—check the items of interest, and write us for prices and literature.

Milk Coolers. Milk Bottle Fillers.
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106 E 8th St., Los Angeles, Cal.

representative of McNab & Smith, who are large draft horse buyers of San Francisco. In associations of this kind, large numbers mean added strength, and a day spent at Davis, at that time, should prove profitable to every horse breeder, whether large or small.

NUMBERING DAIRY COWS.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

In order more accurately to identify cows in large herd, it is necessary to have some mark on each. The general practice among pure bred breeders is to use ear tags with numbers stamped on them, but the common objection to this method by grade dairymen is that the tags are often lost, and where many cows are being milked, the identity of the animals is entirely lost.

On a large dairy recently visited this has been overcome satisfactorily by branding the cows on the rump. For instance when a cow is purchased, or, as the case may be, when she is a home raised cow just starting to give milk, she is given a number in the herd register. This register tells when she was born, when her mother was bred, who her mother was and who her sire was, all of which is set down under her number, together with the amount of milk that she later gives each year, and the per cent of fat it contains. In this way a glance at the cow's number on her rump can be used to follow up her entire history on the books.

That the owner may keep track of each calf from the time it is dropped until it reaches a milking age, a system of ear marks is used which represents the numbers corresponding to that of her dam.

Instead of using a brand in this case, holes are punched in the ear with a harness punch, the value of each hole being as follows: The right ear has five holes around the edge for the numbers 1, 2, 3, 4, 5, while a hole in the center of the ear signifies the number 100. On the left ear the five holes on the edge signify the numbers 10, 20, 30, 40, 50, while the center punch indicates the number 200. These numbers must have their regular positions on each ear, otherwise mistakes will be made in identifying, but when they are properly placed it is very easy to tell the number of their dam. For instance, if one wanted to number a calf 355, he would punch a hole in the center of the left ear for 200, a hole in the center of the right ear for 100 more, a hole in the left ear in number 50 position, and a hole in the right ear in number 5 position. This would make a total of 200 plus 100 plus 50 plus 5, or 355.

Before attempting to do any marking in this way it is advisable to mark it off on paper with a pencil, making a drawing of two ears and the position of the different numbers.

With this scheme the young stock can be easily identified until such time as they begin milking, when they are given a new and permanent number on their rump as before stated.

This branding system would not be entirely practicable with registered animals, as it would tend to mar their looks to a large extent.

FOR LUMPY TEATS.

To the Editor: Since calving time one of my cows has had lumps in her teats at the udder; one of them is dry and it is very hard to milk the other three. Will you kindly give cause and suggest remedy for it? L. F., Edgewood.

ANSWER BY DR. E. J. CREELY.

Any kind of an irritation will create this condition. I would apply once daily ½ Comp. Tinct. Iodine and ½ turpentine. Cease applying when it blisters.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

AYRSHIRE—THE PERFECT COW—Steybrae Ayrshires. Have for sale fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, address E. B. McFarland, San Mateo.

REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823-Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

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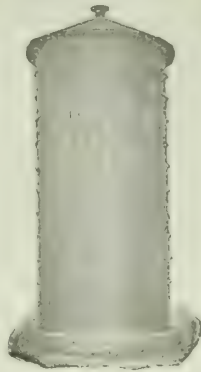
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COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

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“Uncle Sam” Buys



The U. S. Department of Agriculture has just ordered an Ideal Green Feed Silo to be shipped to Glenwood, Hawaii.

This Ideal Green Feed Silo was purchased after fully investigating the merits of all other silos, including home-made, re-sawed and cement silos.

On account of the superior work that the U. S. Department of Agriculture is doing, it is necessary that they be equipped with the best obtainable in order to secure the best results, and “Uncle Sam” is a good judge.

The fact that the U. S. Department of Agriculture have purchased an Ideal Green Feed Silo for their own use should be convincing evidence that it is the proper silo for you to buy.

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FOR SALE—ATHOL R 2:07½, trial 2:04½, under the new rule is eligible to the slow classes; he obtained his record in a 3-in-5 race, won the first in 2:10½, second in 2:07½, and owing to a break and a punctured tire was shut out in the third. Apply to U. S. Wood, McFarland, Cal.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

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MISCELLANEOUS.

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FRANK MECHAM, Petaluma, California—Breeder Shropshires, Ramboulllets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

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HOWARD CATTLE COMPANY

BREEDERS AND IMPORTERS OF
SHORT-HORN CATTLE.
55 New Montgomery Street,
San Francisco.

Fit Show Hogs Gradually.

[Written for the PACIFIC RURAL PRESS.]

There is a growing tendency on the part of hog breeders, for the past two fair seasons, to do away with the practice of fitting breeding stock for show purposes. The heavy losses at the fairs, and in going and coming, have led many large breeders to quit fitting at all, showing their stock in its natural breeding condition.

While it is doubtless true that both the breeder and buyer would be better off with such a rule universally applied, yet the fact remains that a visitor at the fair usually likes to see fat stock; and more often than not he will purchase the fat animal in preference to the one in ordinary condition.

One of the oldest and largest breeders in the State, who has been a consistent exhibitor at the State Fair for many years, recently told how he takes fat stock to the show with no injurious effects to the stock.

He believes there are few breeders who can successfully accomplish the feat without serious results at times; but considers that one advantage with his work is that his stock are in good, although not in show condition, at all times while being bred and during their farrowing season. Some grain is fed always in connection with alfalfa pasture. From this the stock to be exhibited are selected five or six weeks before the fair, and are fed ground wheat in more liberal amounts until they look like stuffed toads.

After shipment home, these animals are immediately put on a ration that tends to reduce the flesh gradually, and in this way the sows are in good condition to farrow twice a year in spite of the extra feeding for the fair. By keeping them in a fairly high condition all of the time, they have another advantage over hogs that are fattened only a short time before the fairs. Being used to carrying good weight all the time, the extra flesh does not cause them to go down on their feet—a thing that all breeders fear.

J. C. L.

FEED GRINDERS AND ARTICHOKE.

To the Editor: On page 506 of your issue of April 25, you speak of running chopped alfalfa hay, together with wheat, through a feed grinder, coming out in the shape of a meal. Will you kindly inform me who handles such a machine? Will you also kindly inform me what the breaking strain is of number 13 baling wire?

If your book on 'California Vegetables', which I have just ordered, does not contain the information will you print in your paper some data regarding the harvesting of Jerusalem artichokes for use as hog feed. Are they best plowed up for the hogs to root out for themselves, or would it be better to sack and feed. How can the tubers be saved for seeding the following spring.—M. W., Cool.

[If you will look through issues of late dates you will find that the Newall Matthews Company, of Los Angeles and Stockton, and the John Deere Plow Company of San Francisco, both handle feed cutters, either of which would answer the purpose referred to. The breaking strength of number 13 baling wire is 665 pounds. You will find that your

questions relative to artichokes are thoroughly covered in our book "California Vegetables."—EDITOR.]

PERCHERON SALES DURING PAST FIVE MONTHS.

To the Editor: In response to inquiries as to the Percheron trade during the past five months, the Percheron Society of America has compiled a summary of transfers entered of record between November 1, 1913, and April 1, 1914.

During this time 4935 transfer certificates were entered on the records; 1836 of these were for animals sold prior to November 1, 1913. Of the 3099 remaining, which were for animals actually sold between November 1, 1913, and April 1, 1914, 1653 were for stallions and 1446 were for mares. This actual record (which is known to be incomplete) of sales made during the five months named, shows that the Percheron trade has been active. It is worthy of note that more sales have been made by small farmers and breeders than heretofore. Personal reports from a great many farmer breeders justify the conclusion that the prices obtained for American-bred horses have been more satisfactory than in the past.

Indiana has been especially active in the purchase of stallions, while Illinois, Ohio, and Iowa, the oldest breeding States, have been heavy purchasers of mares. This is in accord with experience, for all well informed horsemen know that increase in the breeding of good horses is most rapid in sections where Percherons have been used long enough to demonstrate their advantage over light horses in farm work.

WAYNE DINSMORE.

Sec'y Percheron Society of America.

SILAGE FOR HOGS.

To the Editor: I have been reading a lot about silos in your valuable paper and should like to know if hogs as well as milk cows can be fed silage to advantage.—M. W., Cool, Eldorado county.

[The feeding of corn ensilage to hogs is not considered advisable, on account of the amount wasted. The only portion of silage which hogs seem to care for is the ear and of course that is only a small part of silage. Hogs are, however, the only kind of farm animals which can not profitably be fed silage, according to recent experiments which show it to be a profitable feed for cattle, sheep, and horses, the latest thing being that it is good for poultry also.—EDITOR.]

MAY BE TUBERCULOSIS.

To the Editor: Please inform me through the PRESS the cause of the forming of a lump under a cow's jaw. First a swelling appeared, then it broke and matter ran out, and then the lump formed. She eats considerable and seems to be healthy, but is poor. Her calves have all got the same disease. What can be done for her?—G. M., Jamestown.

ANSWER BY DR. E. J. CREELEY.

If the lump is attached to the jaw and is hard, it would be lump jaw. Most people imagine this to be what they term fox tails or wild oats. I am certain this particular cow has consumption and you should not use the

milk until she has been tested with tuberculin. The local treatment would not be so important as the general

treatment; however, apply zinc oxide ointment, once daily, after washing with a 10% Lysol solution.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, Cal.

Breeder of

SHORT HORN CATTLE SHROPSHIRE AND MERINO SHEEP

ATTENTION, SHEEPMEN

My pure-bred, range-raised yearling Shropshire and Merino rams will be out of mountains about April 15 and ready for inspection at my place.

Shropshires sired by rams imported by me from England in 1911.

America's Leading Horse Importers

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AT the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons, two Second Prize ribbons, and other honors.

If you want the BEST let us hear from you.

McLaughlin Percheron Company

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50 COWS AVERAGE 717 POUNDS BUTTER.

This is the average of the 50 cows that have completed yearly semi-official tests to date, in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.



INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as \$150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention. **A. W. MORRIS & SONS CORPORATION.** Holstein-Friesian Cattle. Woodland, Cal.



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INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

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Nine fall boars of good quality and of the best of breeding. Sired by Rookwood Baron by Rivals Champions Best.

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4—5—6 inches. 10-ft. lengths

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An Economical Feed Rack.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

On ranches where alfalfa hay is fed in racks in the corrals, it is usually found that a large part of the hay is scattered on the ground and wasted by the stock; as in eating, the animals are almost sure to pull out more than they can handle.

A novel way of overcoming this was seen on the ranch of G. U. Clark, near Hanford. The registered Holsteins on this place are fed almost entirely in the above manner, but the loss of hay has been largely overcome this year by lining the inside of the racks with inch lumber, from the top to within about 12 inches of the bottom. This allows the cows plenty of room, to pull the hay out, but not in such large quantities at a time, and by having a large manger underneath, there is practically no waste.

The experience of feeding pie melons on this ranch the past year, may also be of interest, as in many sections these melons make a large tonnage of volunteer vines. They are fed in connection with alfalfa hay, being first chopped open, so that the stock can easily get at the inside. They are fed in racks, in this chopped form, and while some cows do not relish them at first, in a short time they acquire the appetite and leave good alfalfa hay to eat melons.

Although melons are not supposed to contain much nutriment, the melons and alfalfa were found to go well together, and proved a big saving of alfalfa as well as an aid toward higher production in the herd, for they furnished a succulent feed, which is almost impossible to secure in the winter months without the aid of the silo.

DAIRY INSPECTORS SATISFIED.

[Written for the PACIFIC RURAL PRESS.]

Dairy inspectors have had their auto expense allowance from the State reduced lately and there has been some talk of reduced efficiency on that account.

Some years ago they were allowed \$4 per day for the use of the automobiles they furnished in their work of inspection. Tires were higher priced

then, and the State Board of Control had no criterion by which to judge the actual cost of upkeep. Later, their charges were turned in as \$3.50 per day and still later at \$3.

About two months ago Mr. Bloodgood, of the State Board of Control, called up the Fish and Game Commissioner whose deputies also were using their own automobiles. He asked the latter why it was that his men were turning in only \$35 per month, for the use of their autos, besides gas, oil, and grease.

"Because that's what it's worth," was the reply.

Thereupon, the dairy inspectors' allowance was cut to the same figure. On April 21, Mr. Andreason, secretary of the State Dairy Bureau, called on Mr. Bloodgood, at the State House saying that \$2 per day, not to exceed \$40 per month, plus oil, grease, and gasoline would be satisfactory for his force's auto expenses, and this was allowed. Since Mr. Andreason is satisfied, the reduction is not likely to reduce the efficiency of dairy inspection materially.

WHEN TO SHOW HOGS IN 1915.

To the Editor: Can you tell me whether hogs which are to be entered at the Panama Pacific Exposition for competition will have to be kept there during the entire time, that the Exposition is open? If so the cost will be so great that the average man can not afford to enter them. Also can you tell at what time of the year the swine will be judged and the names of the parties who will have charge of the live stock so that I may communicate with them about these matters?—W. A. YOUNG, Lodi.

[ANSWERED BY J. C. LOOMIS.]

The judging of swine at the Exposition will take place between November 3 and 16. It will not be necessary for breeders to show their stock, only during the competitive tests, unless they so desire, but they will be compelled to have their hogs on the grounds by November 1. It is thought that the cost to California breeders will be about the same as is customary in showing at the California State Fair, as the same transportation rates will likely be granted by the railroads and the feed will be furnished by the live stock department at actual cost to them. If you will communicate with D. O. Lively, Chief of the Live Stock Department, Exposition Bldg., San Francisco, you will be able to get any further information that you may want.

FLEAS BUSY AGAIN.

To the Editor: We are having an epidemic of fleas in the barn corral and house. Have used 35 pounds of chloride of lime which only stopped them temporarily and was offensive to use. What do you recommend?—B. S., Winters.

[After much discussion of this subject by readers last year, a great many remedies for fleas were brought out. The one which seems to fit your conditions the best being through the use of Naphthalene Flakes. A. R. Schroeder, of San Gregorio, gives the following advice about this method: Either make a saturated solution of the flakes in a cheap grade of kerosene and

Sure Death to

Gophers
Squirrels



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Exterminates Gophers, Squirrels, or any vermin in holes or caves where the poisonous gases can be confined.

GETS THEM EVERY TIME—It produces 4,000 cubic feet of carbon-bisulphide gas, which is sure death to any animal forced to breathe it. It burns without disturbing the ground, and the poisonous gas penetrates to every part of the burrow. It can also be used for fumigating.

ABSOLUTELY SAFE TO HANDLE—Anyone can hold the cartridge without the slightest danger of being injured. It is the most inexpensive, the most effective, the surest, safest and easiest.

\$5 per gross.

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San Francisco, Cal.

sprinkle the mixture generously around the places overrun with fleas, or throw handfuls of the flakes just as they come, here and there around the infected places.

It would be interesting to know at this time what success enquirers on this subject had last year, as it seems that the fleas have started another campaign on the peace of farmers and their stock.—EDITOR.]

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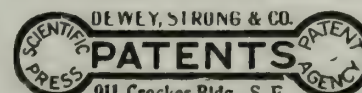
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Feeding Pullets.

[Written for the Pacific Rural Press
by SUSAN SWAYSGOOD.]

When the sexes can be distinguished is the time to move the cockerels that are intended for market. This task should not be delayed until they get big enough to be sorted out, because broilers are worth money this year and the quicker they can be gotten ready the more they will bring. Another reason is that the pullets should be fed entirely different to the cockerels, if intended for layers. Pullets that are fed too much stimulating food mature too early, and while they may lay a few eggs at an early age they will not keep it up and lay through the season. Feeding for early maturity is neither wise nor sound policy, except just as a novelty, because there is not the stamina to back it up. And the same may be said of underfeeding. Pullets that have been held back by retarding maturity never amount to much as layers.

The aim in feeding pullets intended for layers or breeders should be to keep them growing as rapidly as possible without forcing. This is indeed a fine point in feeding, but it can, and should be done if we want the best results. The forcing into premature maturity is caused by feeding a stimulating diet, too much meat and too much ground feed that is easy of digestion. One small feed of ground feed each day, that can be cleaned up in one hour, if dry mash, and in five minutes if moist, is all that should be allowed in the way of soft food. This will be sufficient to nourish the system and ease the digestion. To feed for growth give as good a range as possible, or good sized yards, feed plenty of good wheat, oats, either soaked or sprouted and the same with barley, some prefer rolled barley and that is good, but avoid corn and too much fattening food. Green feed can be fed in abundance and this with good sound grain will promote a good steady growth, if enough is fed. That is generally the stumbling block, the

feeder leaves too much to chance. A good safe rule is to feed all the grain young stock will eat at night and a little left over for morning. Feed a little meat once or twice a week, unless milk can be had, when growing pullets will need no meat at all until mature.

Another safe way is to feed, at least three times a day, something unless they have good picking on the range.

FEEDING DIFFERENT BREEDS.—So far as I can see it makes no difference what breed of pullets we are feeding, the difference, if any, lies in the use they are intended to fill. Pullets are intended as layers or they would not be kept after the broiler stage. Of course the small breeds will stand a little more fattening food than the heavy breeds but there is no economy in feeding it unless it could be had cheaper. Corn is of too heating a nature to feed to young or old in this climate in summer time, peas and beans are also too fattening to be fed much of, kaffir and Egyptian corn are fed very freely among the farmers that can grow it to Leghorns both young and old, but for the person who must buy I believe there is more value in wheat than in either of these corns.

THE EGG LAYING CONTESTS.—Sometimes it may be said, comparisons are odious, and it would appear as if one of these times was in comparing the egg laying contest reports. There certainly are a good many contradictions, on the surface, but one can see that there is much more in the man that cares for the hen, than in the breed or variety the hen belongs to. Given a person with good common sense, good observation, and a fair amount of liking for birds and he can do well with any breed. But I don't care how industrious a man is, if he does not use his eyes as well as his hands, his place is not in a poultry yard. This fact is brought home to me every day in things that do not concern me at all, but that I see them and the other fellow does not.

Tom Baron's English stock that won in the Missouri and other contests are now being advertised in the east and a good many dollars will exchange hand for eggs from these famous layers. Some of course will hatch out chicks that will make good, but by far the greater number will send their money and then lose interest in the affair. Persistence and sticktoitiveness are the only things that will win out in breeding up a good flock of paying hens.

Almost any good standard breed, that is pure can be bred up to where they will pay, and pay well.

A rolling stone gathers but little moss though it roll many years, and the poultryman who changes his breed every year or so gathers very little knowledge of hen lore and less of hen wealth.

Stay with it and breed up, unless you really have got something that is no good. If a farmer changed his live stock every year or so he would soon be broke in everything but experience, and no bank will loan money on that commodity.

COCKERELS VERSUS PULLETS.

A few days ago a man was telling me that for some reason all his hatches this year had been nearly all cockerels. He keeps two breeds and

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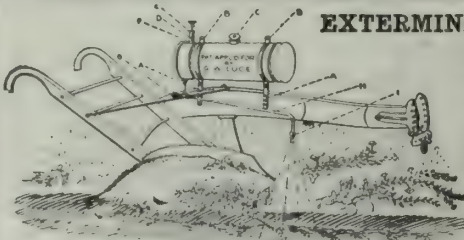
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San Francisco, Cal.

his males are all two years old and over with young hens. Now that struck me as curious because with an old male, the hens are generally dominant. As this man passes for an expert poultryman I just led him out a little, to see if he did really know as much as he thinks he does, but he was entirely lost as to the cause of this cockerel crop when what he wanted was pullets. Now it did not need any expert doctor to diagnose the case at all and before we had talked ten minutes I knew where the trouble was, but I did not tell him because if I had he would have felt that a mere woman was trying to crow over a man, who knows poultry raising from A to Z. He said in his remarks that he had only six hens with the male bird, that

every three days the male was changed, as he kept two for each pen, this insures a good strong male at all times, while the hens will get tired and jaded so there is little doubt that the males were dominant. Another fact brought out was, that in selecting eggs for his incubators he used an egg tester, that weighed the eggs or something like that. Anyway he sets nothing but the heaviest eggs and these are most likely the largest as well as the heaviest, hence usually contain the male germ.

Now if he took the eggs as they come, except ill-shaped or thin shelled I think he would have a fair number of pullets and if he would use but one male, and give him say eight hens he would get more pullets, but this man does not know where the trouble is and because he fails to see where it is he firmly believes that nobody can tell him and that the cockerels come because it is his luck.

INBRED CHICKENS.

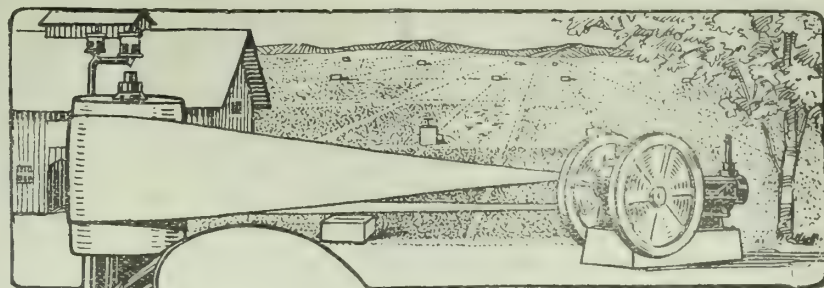
To Mrs. Swaysgood: I have the Black Minorca chickens and the flock that I have now were hatched last spring. The roosters are brothers to the hens. Please tell me whether it will be necessary to change roosters this spring or not.—E. M.

This appears to be a simple question, yet it is of more importance than almost any other question that appears in these pages. Breeding brother and sister is not right in any way, though it is done many times, but mind, every time it is done the stock is so much weaker, and I mean weaker in everything. At one time the Leghorns around Petaluma were so run down through this system of incest that great numbers of chicks died every day, and it got so that no poultryman even hoped to raise more than 50% of what he hatched. Now this was a gross waste of money, labor and time and it simply had to be stopped or the whole chicken fraternity would have gone broke. Nearly every man that raises his own breeders, and the men who keep breeders to sell eggs to the hatcheries, import male birds from the far eastern states every fall, and it shows that it is good policy, for now the flocks are healthy and vigorous and lay 10% more eggs than formerly. I certainly would change male birds, though this is very late in the season as you would have to wait ten days, after introducing the new male into the flock for the eggs to be fertile.

BALANCED RATION FOR ROCKS.

Please balance me a ration that will give best results for Barred Rock hens that have free access to alfalfa range and all the skim milk they can drink. What amount, in ounces should be fed each fowl?—Mrs. R. F. M.

These hens are so well off that it looks hard to beat the ration used but as there is plenty of milk I would mix up a little moist mash for breakfast. The mash may be very simple because the main thing is to get the hens to consume more milk than they usually do in just drinking. Make the mash two parts bran to one of shorts or ground oats, adding salt to flavor, and to make the hen thirsty. Mix with milk to a crumbly state and feed at breakfast. Feed all the wheat and oats, or just wheat straight, the hens eat readily at night before going to roost. A spare handful is considered the right amount for each, but I never weighed the feed by ounces so cannot say.



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The Home Circle.

Typhoid Fever Fought by University.

Hereafter, any Californian who has typhoid fever has himself to blame for his wholly unnecessary affliction.

It has been announced that typhoid vaccine and directions for its use will be sent free to any physician in the State who will make application for it to the Department of Pathology of the University of California.

A new method of typhoid vaccination has now been worked out by Dr. Frederick Parker Gay, Professor of Pathology in the University of California. Vaccination against this dread disease has already been proved a success by worldwide experiment and use. Heretofore, however, the use of typhoid vaccine has caused, in many persons, considerable fever or nausea. Dr. Gay's new method, however, is not only of increased efficiency but does away with, or greatly reduces, any disagreeable symptoms in connection with such vaccination. Instead of using attenuated strains of living bacteria, as French medical investigators had done, Dr. Gay makes his vaccine from typhoid bacteria which have been killed and ground exceedingly

minute. His new method differs from the method ordinarily used heretofore in the United States and Great Britain in that he uses a sensitized culture—a culture treated with immune serum. Heretofore the three inoculations required have been given at intervals of ten days. Professor Gay's method shortens the time required. The second and third injections of the vaccine are now put into the arm three and six days, respectively, after the first inoculation.

For some years the British, German, and Japanese armies have enforced vaccination against typhoid for all their men. The United States army adopted it in 1911, and immediately cut down typhoid cases in the army to one-twenty-first of what they had previously averaged per annum. The field agents of the United States Department of Agriculture now all take this precaution.

It is particularly in small towns and in the country that danger from typhoid is great, for the large city is apt to have better water supply, protected against sewage pollution. It is contaminated water, contaminated milk, and flies which are the cause of most cases of typhoid. Even a city dweller who is protected against these three sources of infection is still in danger of contracting the disease, since "typhoid carriers" are numerous and may contaminate food or drink. Such a typhoid carrier was discovered a year or so by the State Hygienic Laboratory of the University. He was a winch-driver on the ship "Acme", who had himself fully recovered from the disease. Merely because he dipped his fingers into the water-cask on deck, during a period of five years he gave typhoid fever to thirty people, of whom five died. Besides these known cases, there is no telling how many others contracted the disease from him without the connection being traced. Director Wilbur A. Sawyer of the State Hygienic Laboratory estimates that two per cent of all the people who have typhoid remain "carriers" after they themselves have recovered from the disease. He urges that physicians should not discharge typhoid patients as cured until bacteriological tests prove they are no longer dangerous to others.

HEALTH HINTS.

Neuralgia.—Two of the commonest causes of neuralgia are neglected decaying teeth and eyestrain. It may be that no one particular tooth is badly decayed, there may be no actual toothache that the sufferer can point to as the reason for those shooting pains about the cheek or jaw which he endures almost nightly. Nevertheless, in about 60 per cent of the cases the teeth are at the root of the trouble. Many people whose neuralgia is due to eye-strain are not conscious of anything the matter with their sight. It may be only when they seek medical advice that the suggestion of eye trouble is made to them; they go to the oculist, glasses are prescribed, and the neuralgia disappears. The sight debility due to lack of fresh air, exercise, and want of sunshine; over-fatigue; worry, sometimes over trifles that could be altered by a little arrangement—these are all predisposing causes of neuralgia.

Heat as a Remedy.—When an attack of pain comes on no matter where

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We cut every piece to fit, and furnish doors, windows, hardware, paint and absolutely everything to make the house complete. A numbered diagram tells you how to put it together, without further expense.

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it may be, the best remedy for the moment is heat. This may be applied in various ways, a hot-water bottle or a salt-bag may be laid against the skin; a wad of plain cotton wool made hot and bound in place by a bandage, or a stimulating lotion or cream may be rubbed on the skin.

Sleeplessness.—Fresh air, as much as much as possible, is the best cure. If you cannot go out of doors sit in

the porch of your house or in a room with open windows as much as you can. The bedroom also should have plenty of fresh air. Simple food and no late suppers are additional means which may be adopted. Take measures to avoid cold feet. Use a bed-warmer if necessary. Tea twice a day seems too much; once a day and freshly made, weak tea at that, would be better. Do not use drugs under any

circumstances, and do not doze during the day, as this is sure to destroy the night's rest. Early rising is also desirable. We assume there is nothing radically wrong with the system, but if this is the case medical advice should be taken.

Our Young Folks

Jimmie: a Sketch from Life.

"And can't you enter, Ned, truly?"

"I don't see how I can possibly, Jimmie; for it costs so much to hire a wheel, and we haven't any spare cash, you know."

Jimmie drew himself closer into his big brother's arms, and sat quite silent, looking out through the small, dingy window into the cheerless street. Suddenly he sat upright, with a jerk that sent a twinge of pain through his twisted back, and began to pound Ned's shoulder vigorously in his excitement.

"Yes, you can, you can!" he almost shouted: "you can take the crutch money, and it don't make no odds about me. We'll get some more, and anyway one of the old ones is good yet. Say you will, Ned! Say you will please!"

Ned's face had grown a dusky red under its freckles, and his eyes were shining. Since mother died he had given up everything for Jimmie,—poor Jim with the back that was bad o' nights! He had scarcely dared let himself think of the Public School Bi-

Send Only **\$1.00** for this Comfortable Rocker



Price \$12.50

Freight Prepaid

**One Dollar Down
50c a Week, or \$2 a Month,
Whichever You Prefer.**

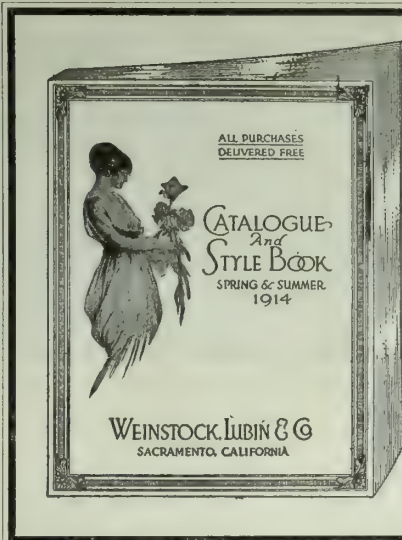
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Our furniture lasts a lifetime. We guarantee satisfaction. Examine this rocker, if not satisfied return it at our expense and your money will be returned to you without question.

Slip \$1.00 in an envelope to-day, mail it to us, stating whether you wish to pay the balance in weekly or monthly installments, and we will ship the chair, freight prepaid, the day we receive your order.

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Weinstock, Lubin & Co. SACRAMENTO CALIFORNIA

cycle Race, announced in black letters from every tree and fence as to take place next week. He had practiced whenever he could borrow a wheel, and the fellows were good-natured enough to lend theirs frequently.

Strong and light of build, he was a fine rider; and many of the others openly regretted that he could not enter for the race, while one or two were meanly glad.

To be sixteen, a boy full of life and spirits, and yet to have such deprivations to bear, was hard; and tonight it had seemed doubly so. Ned wondered, as he gave Jimmie an awkward hug, if the little boy knew how many times he had put away the tempting thought of the money saved penny by penny to buy the new crutches. The old ones were short and broken besides, and the poor little Jim, had limped painfully for many months. Ned really did not know what to do, and was having a hard fight, when Jim broke the silence:—

"Why don't you say yes, Ned? I want you to; and then, when you get the prize, you can buy them easy, and have a lot left over."

"Jimmie, you're a brick; and I just will try! My! but won't it be fun? I'll get that wheel that's for rent at Murray's, and if I don't zip along! You won't be able to see me for dust."

For days after that Ned was in fever of excitement. When it came to be bedtime every night, Jimmie settled himself comfortably at the foot of the bed and Ned was rubbed. The weak little hands seemed tireless as they pinched and pounded at the muscles of arms and legs.

"I'm the trainer," Jim declared, "and my man's got to win."

He was the housekeeper besides, and at the end of the first day he gave Ned back the most of the money which was usually spent for food.

"We'll just have bread and milk this whole week, Ned. That's the way fellers trains. I guess I know. And then you'll have more money for the wheel."

"But that makes you train, too, Jimmie; and that ain't fair."

"'Tis fair, so! Milk's good for cripples same as strong fellers like you."

The night before the race poor little Jim was very restless, and Ned was up nearly all night. The rubbing and the fasting, the constant strain of excitement, had made inroad on Jim's small supply of strength. As the two sat at breakfast, heavy-eyed, pale-faced, and very tired, they looked at each other despairingly.

"It's no use, Jim. I can't go. I feel rocky, and you aren't fit to be left."

Then Jim burst into tears. All

the weariness and nervousness came out in the torrent of sobs that shook his frail body. Ned was frightened.

"Jimmie, don't cry,—now don't! I will race, and I'll win, too. Chirk up now, Jimmie! Don't be such a kid! I'll take you down myself, and can sit on the stand and yell when I go by."

"Ye-es, I will," choked Jimmie, consoled. "I'll yell for all I'm worth."

Two hours later the ladies on the grandstand noticed a childish figure with a pale, eager face bending over the railing; and, as the half-clad contestants whirled into place below, Jim leaned far out and waved his hand frantically. It was time for the start. All was silence, then a ringing note and they were off. The yellow colors on Ned's arm flashed in the sun as he sped past, the rented wheel kept pace with the others. Around once more, and Jim's face was white. Ned was falling behind. Two, three, had passed him; and the others were gaining steadily. A cheer went up for the blue, for the red. Then the little trainer fathered himself together, and in shrill treble called:

"Yeller, yell! Rah, hah! Go it, Ned!"

Ned glanced up. His face was set, and by a glance he lost ground. But his courage was renewed, and he struggled on. Jim turned in desperation to the crowd behind.

"Please won't you yell for Ned?" he half shrieked. "Yell for my Ned, the one with the yellow, yellow, yellow! Rah, rah, rah!" He pounded with his crutch, he clapped his hands, he screamed; and the crowd caught his enthusiasm. One good-natured, young man started it; and little by little the whole stand appreciated the situation, and in a moment was on its feet, giving deafening shouts for "the yellow, yellow!" interspersed with, "Brace up, Ned! Go it, Ned! Rah, rah, rah!"

It came to Ned in a dream as he whirled past. He heard his name, he heard the cheer. Perhaps he was winning. He did not dare to look. Once more around. He bent over the bar, and his muscles turned to steel. He passed the red with a sudden spurt, and the blue was just ahead. He is gaining: his handle reaches the other's saddle, passes it, and with desperate, awkward, unscientific plunge the rented wheel has cleared the line, and Ned has tumbled off in a dead faint.

The hurrahs were sounding in the air; and the little trainer was sobbing with his head on the shoulder of the good-natured young man; who wasn't ashamed of the tears in his own eyes. It was this new friend who took both boys home, the exhausted victor and



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little Jim, still trembling and sobbing for joy.

And this is not quite all. Because it is a true story, I must tell you the rest. The prize money bought the crutches; and now, if you will go some day to Ned's house, the good housekeeper will let you in. Jim himself will show you Ned's fine new wheel, which the little brother polishes and oils daily; and you will be told that it came from the great factory where Ned and the good-natured young man are both at work. Jimmie is sure that the factory belongs to Ned, and the young man only smiles.—Central Christian Advocate.

Goodheart: "I've got you down for a couple of tickets; we're getting up a raffle for a poor man of our neighborhood." Joakley: "None for me, thank you. I wouldn't know what to do with a poor man if I won him."

THE MARKETS

San Francisco, May 6, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Spot offerings of wheat in this market have increased somewhat lately, and with limited interest on the part of buyers, prices show less firmness. The northern market has eased off a little, and this probably has some effect on local conditions.

California Club, cti.	\$1.62½@1.65
Forty-fold	1.65 @1.70
Northern Club	1.62½@1.65
Northern Bluestem	1.75 @1.77½
Northern Red	1.62½@1.70

BARLEY.

Spot values are unchanged, though the speculative market shows more firmness than for some time past. Supplies on hand, however, are ample for all requirements, and while some holders take a firm view, others are anxious to sell.

Brewing and Shipping..	Nominal
Choice Feed, per cti.	\$1.00 @1.05
Common Feed	Nominal

OATS.

With the exception of white feed stock, there is very little oats on the market. Trading is dull, but the scarcity has caused some firmness, and whites show a slight advance.

Red Feed	\$1.25 @1.40
Gray	Nominal
White	1.30 @1.35
Black Seed	Nominal

CORN.

There has been no change in this line, current arrivals being about equal to requirements. No California yellow is coming in here, and Egyptian moves slowly in this market, though there is some business in the country.

California Yellow	Nominal
Eastern Yellow	\$1.77½@1.82½
Eastern White	Nominal
Egyptian	1.85 @1.90
Milo Malze	1.80 @1.85

RYE.

Values stand nominally as for some time past, with no demand worth mentioning, and moderate offerings, which are pretty steadily held.

Rye, per cti.	\$1.45 @1.50
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BEANS.

Only a few changes have been made this week, and the tendency toward advancing prices seems to have about reached its limit, for the present at least. Blackeyes have been marked up sharply, and choice offerings of large and small whites are somewhat higher, but otherwise values are unchanged. Red kidneys are no longer quoted, as offerings in the local market are entirely cleaned up. The demand continues fairly active, and supplies have been reduced to such an extent that no weakening is expected.

(On wharf.)

Bayos, per cti.	\$6.20 @6.50
Blackeyes	7.00 @7.25
Cranberry Beans	4.50 @5.00
Horse Beans	2.15 @2.25
Small Whites	5.25 @5.80
Large Whites	3.90 @4.25
Limas	6.75 @7.00
Pea	4.25 @4.50
Pink	3.90 @4.35
Red Kidneys	Nominal
Mexican Red	6.00 @6.25

SEEDS.

There is little movement in some lines, but on the whole the market is rather quiet. Prices are steadily held at the old figures.

Alfalfa	12½@15 c
Broomcorn seed, per ton.	Nominal
Errown Mustard, per lb.	3¾c
Canary	7 @7½c
Hemp	2½@3 c
Millet	2½@2¾c
Timothy	7½@8 c
Yellow Mustard	Nominal

FLOUR.

Local business is of moderate proportions, purchases as a rule being limited to nearby requirements. Values hold very steady as formerly quoted.

Cal. Family Extras	\$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

No further change in prices is noted, but the market remains decidedly weak, though arrivals are very small for this season. The weakness is increased by the fact that much of the hay arriving is on consignment and must be moved immediately, as dealers are unwilling to take up such offerings at present. Consumers are buying only for immediate needs, as they are assured that prices will be no higher. Another unfavorable feature is the large proportion of medium and low grade hay in the offerings. Alfalfa finds little demand in this market, and is easy as to value. The new hay harvest is now well under way, and baling has started at some points.

Fancy Wheat, light bales.	\$15.50@16.50
No. 1 Wheat, or Wheat	
and Oats	\$12.00@13.00
do No. 2	10.50@12.00
Lower grades	9.00@10.00
Tame Oats	10.00@13.00
Wild Oats	8.00@10.00
Alfalfa	8.50@10.50
Stock Hay	7.00@9.00
Straw, per bale	65@95c

FEEDSTUFFS.

Rolled barley has again eased off a little, but seems to be fairly steady as now quoted. Rolled oats are firm, in sympathy with the whole grain, but there is very little demand. In other lines there is only a moderate movement, values standing as before.

Alfalfa Meal, per ton.	\$18.00@19.00
Bran, per ton	24.50@25.50
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal.	26.00@27.00
Cracked Corn	41.00@42.00
Middlings	32.00@34.00
Rolled Barley	22.00@22.50
Rolled Oats	28.00@29.00
Shorts	26.00@27.00

Garden Truck.

VEGETABLES.

Arrivals of asparagus have been dropping off a little lately, being much lighter than a few weeks ago, and as the demand is fairly good there has been an advance in prices. Green peas have advanced sharply, with limited offerings of desirable stock. Wax beans are also doing a little better, while string beans are easy. Bell peppers are much higher, while Mexican tomatoes move fairly well at the old prices. Mushrooms are lower, and cucumbers, which are beginning to come in more freely, have dropped sharply.

Cabbage, per cti.	\$1.00@1.25
Cauliflower, dozen	40@70c
Green Peppers, lb.	10@17½c
Carrots, per sack	35@50c
Green Peas, sack	2.75@4.00
Tomatoes, Mexican, box.	1.75@2.25
Beans: Wax	5@8c
String	7@9c
Sprouts, lb.	4@6c
Rhubarb, box	50c@1.25
Lettuce, crate	50@75c
Mushrooms, hothouse, lb.	25@30c
Asparagus, box	1.25@2.00
Cucumbers, box	1.00@1.75
Eggplant, lb.	10@15c

POTATOES AND ONIONS.

Supplies of new potatoes have increased more rapidly in the last week than before, resulting in a sharp decline, and from all indications there will soon be an abundance of new stock. Old river goods move in about the usual way at unchanged prices, with Oregon held on a slightly higher level. Sweets are a little higher. Onions remain firm, though offerings of Australian and Bermuda stock are sufficient for immediate needs. Some new garlic is now offered, but the movement so far has been limited.

Potatoes:	
River Whites	50@75c
Garnets, lb.	2½c
New Potatoes, lb.	1½@2½c
Oregon Burbanks	75c@1.00
Sweet Potatoes, per cti.	2.50
Onions: Australian	\$4.00@4.25
Bermud, crate	2.00@2.50
Garlic, per lb, new	8@10c

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Dairy Produce.

POULTRY.

Eastern stock is coming in at about the usual rate, while offerings of local chickens are large, and while there has been a good demand, values show a further decline. Small hens move slowly at lower prices, and it has been necessary to make concessions to clean up the broilers.

Large Broilers	25 @26 c
Small Broilers, per lb.	24 @25 c
Fryers, per lb.	23 @25 c
Hens, extra, per lb.	19 @20 c
Hens, large per lb.	19 @20 c
Small Hens, per lb.	18 @19 c
Young Roosters, per lb.	23 @26 c
Squabs, per doz.	\$2.50@3.00
Geese, per pair	2.50@3.50
Ducks, doz.	6.50@8.00
Turkeys, live, per lb.	20 @21 c
do dressed, choice.	23 @25 c

BUTTER.

Prices have shown little fluctuation for the last week, all grades being ½c higher at present. All offerings are readily absorbed and there is no unusual feature to the market.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23½	23½	23½	23	23	23½
Prime						
Firsts	23	23	23	22½	22½	23
Firsts	23	23	23	22½	22½	23

EGGS.

There is an active demand here, both for storage and current consumption, and values are well maintained, though an advance toward the end of last week failed to hold. Some northern eggs have been brought in lately, and a heavy shipment of Chinese eggs came in the first of the week, but these offerings have had little apparent effect on local quotations.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	24	23	23	23	23
Firsts	22½	22	22	22	22	22
Selected						
Pullets.	21	21½	20½	20	20	21

CHEESE.

All varieties remain as last quoted, with demand and supply about balancing. Monterey cheese is weak, with excessive offerings, but more firmness is expected before long.

Fancy California Flats, per lb.	13 c
New Young Americas, fancy.	15½c
Monterey cheese	12@13 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	23	23	23	23	23	25
Eggs	22	24	23	24	24	24
Cal. cheese:						
Flats	14	14	14	14	14	14

Deciduous Fruit.

Strawberry prices, on the whole, are pretty well maintained, though Watsonville stock is coming to hand in larger quantities. Some Fresno stock is selling at about 75c per crate. Raspberries are a little lower, though supplies are not yet very large. The heavy movement of cherries has been somewhat delayed by the cool weather, and with an active demand, values show little decline. Loquats are appearing on the local market this year in quotable quantities, with a large crop in some sections. Apples are moving off slowly but steadily, with no change in prices.

Raspberries, crate	\$1.25@1.50
Strawberries:	
Malindas, chest	2.00@4.00

Banner, chest	2.50@4.50
Longworths, chest	4.50@6.50
Apples: Newtown Pippins	1.25@1.75
Oregon Spitzenbergs	1.40@2.00
Cherries:	
Purple Guigne, box	1.25@1.50
White, lb.	9@10c
Black, lb.	10@12½c
Loquats, box	1.25@1.50

Dried Fruits.

The local dried fruit market in general has quieted down a little since the first excitement over the curtailed production, but many buyers are still out for new crop contracts, and prices show considerable firmness in all lines. Prunes continue very strong and while 6c is the top figure as a rule there are continued reports of 6½ to 6½ being paid in certain cases. While good reports have been received as to the apricot crop in the south and at various scattered points, a shortage in the whole output is certain, and packers are taking considerable interest in this fruit, some contracts having been made for choice varieties at 9½c. New crop peaches receive only moderate attention, as the crop is in good shape and spot stock is moving slowly, but some sales have been made at 4¼c, and old stock is still held as high as 4½c. According to Fresno reports, some packers are out with offers of 4c for future muscat raisins and 4½c for Thompsons. The spot market is closely cleaned up except for peaches, which are moving slowly. The New York Journal of Commerce says: "Reports as to the crop outlook for prunes on the Pacific coast are still discouraging to those who had looked for a good output as the result of the early and heavy bloom. Mail advices received in the trade from principal shipping points in California are to the effect that the volume of business in spot prunes is satisfactory, though orders for straight cars in any size are few. A better demand for assorted cars than usual at this time is reported and packers express the opinion that a demand of this kind will continue through the balance of the season. Packers therefore look for no material change in prices in the near future. Raisin Day passed here with little recognition from the jobbing or retail trade. The feeling among buyers at this end seems to be bearish in view of a present stock of 25,000 tons and a most promising outlook for the coming crop. Therefore the one or two independent packers who are soliciting business on futures at 6½c for fancy and 6c for choice in 16-ounce cartons for October shipment are meeting with little encouragement. Moorpark apricots, extra fancy, for shipment out of the new crop are stronger, some asking 1c a pound advance on recent quotations of 14 to 14½c owing to the active export demand. There has been no change in estimates of this season's crop. Spot stocks of apricots on the coast are reported to be practically exhausted. The market on prompt shipment is strong. Peaches for spot shipment from the coast are closely concentrated, but consuming demand from Eastern distributing markets is slow and there has been no advance in future quotations. Future peaches seem to be neglected."

Evap. Apples	Nominal
Apricots, 1914	9 @9½c
Figs: White, 1914	3¾c
Black	Nominal
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914.	6 c
Peaches, old and new	4 @4½c
Pears	Nominal

Raisins (in sweatbox):

Loose Muscatels	4
Thompson Seedless	5 @ 5½c
Seedless Sultanias	4¼ @ 4½c

Citrus Fruits

Shipments of navel oranges from California are going forward rapidly, with some districts cleaned up. It is estimated that there are about 3000 cars of navels yet to be shipped, besides the valencias which will follow. Markets are showing an increasing demand for the fruit and prices are advancing.

At New York, Monday, May 4, fifty cars of navels were sold at prices averaging from \$3.25 down to \$2.25 per box. Bloods brought \$3.10. Other auction points averaged about the same as New York. Lemons are bringing on auction from \$2.25 to \$2.75 per box.

Total shipments from southern California to May 3, were: oranges 21,868 cars as against 9,116 cars to same date last season. Lemon shipments have been 1,219 cars as against 1,163 cars last year.

On Monday of this week the Citrus Protective League at Los Angeles, commenced mailing checks to its members covering the refund of \$408,680.43 which was won by them in a suit against the railroads for a \$1 instead of \$1.15 rate per box for lemon shipments to the east. This large fund will be divided among 4,820 members of the League. Besides this amount, the railways will refund \$70,000 more to growers who are not members of the League.

The demand in this line at San Francisco has been a little slow for the last few days, as most dealers took on liberal supplies last week, but fancy navel oranges have been marked up a little, and all grades of lemons are higher.

Oranges: Navels	\$1.00 @ 2.50
Tangerines, crate	75c @ 1.25
Grapefruit, seedless	1.50 @ 2.50
Lemons	2.00 @ 3.75
Limes	9.00 @ 10.00

Nuts, Honey, Hops, Etc.

NUTS.

There is a fair demand in a jobbing way for this time of year, but with supplies entirely out of the first hands the quotations are entirely nominal. The southern walnut growers have made arrangements to handle the crop on a new basis, and are looking for a large output.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15½c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

No new honey of any consequence has been offered here so far, but arrivals are expected in the near future, and values are easy, with considerable old stock unsold. Some recent reports from southern producing districts, however, say the crop will be short of expectations.

Comb: White	12 @ 13 c
Amber	10 @ 11 c
Dark	9 c
Extracted: White	5 @ 6 c
Amber	4½ @ 5¼c
Off Grades	3 @ 4 c

BEESWAX.

Values stand as before. There has been a fair movement lately, but dealers report no exceptional demand, and offerings at present are moderate.

Light	30 @ 33 c
Dark	28 c

HOPS.

The old crop is pretty well cleaned up, and there has been no large movement for some time. A good many contracts are being made for the new crop, however. A large 5-year contract is reported for Sacramento hops, at 10c. for 1914-15, and 13c. for the remainder.

1913 crop	15 @ 17½c
1914 crop	14 @ 15½c

Live Stock.

Prices in the local market stand as before on all descriptions, with arrivals keeping well up to current requirements. There is considerable business in feeders in the country, and sheep and cattle are still being brought in from outside States to the California ranges.

Steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼ @ 6½c
No. 2	5¾ @ 6 c
Bulls and Stags	3½ @ 5 c
(Grass-fed cattle, ¼ @ ½c less.)	
Calves: Light	8½ @ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs.	8¼ @ 9 c
100 to 150 lbs.	8½ @ 8¾c
Prime Wethers	5½ @ 5¾c
Twes	4½ @ 5 c
Milk Lambs	6 @ 7 c

DRESSED MEATS.

Steers	12 @ 12½c
Heifers	11½ @ 12 c
Veal, large	12 @ 13 c
Small	14 @ 15 c
Mutton: Wethers	11 @ 11½c
Ewes	10 @ 10½c
Suckling Lambs	13 @ 14 c
Dressed Hogs	12½ @ 13½c

WOOL.

Prices for Humboldt and Calaveras wools are slightly higher for the best clips, and there is still considerable wool unsold in these localities. The San Joaquin clips are pretty well cleaned up, and most of the Red Bluff wool has been sold at 15 to 18 cents.

Spring Clips:	
San Joaquin	12 @ 14c
Humboldt and Northern	15 @ 20c
Calaveras	14 @ 18c

HORSES.

Offerings of the medium and lighter weights are still the feature of this market, arrivals being somewhat larger this week, though there is no really heavy shipping movement to the city. There are also continued sales from private stables, which tend to depress the market for ordinary stock, though good sound horses find a fair demand at the old range of prices.

Heavy drafters, 1700 lbs. and over	\$275 @ 325
Light Drafters, 1500 to 1650	225 @ 250
Chunks, 1350 to 1500	200 @ 225
Wagon Horses, 1250 to 1350	150 @ 200
Delivery Horses, 1050 to 1250	100 @ 125
Desirable Farm Mares	75 @ 100

PUBLISHER'S DEPARTMENT.

Frequently parties come to our office to buy files of the PACIFIC RURAL PRESS, which we are not always able to supply. We have just received a letter from W. E. Lingard of Santa Barbara, which states: "I have a complete file of the RURAL PRESS from July 2, 1904, up to date, part of them being bound. Do you know of anyone who wishes to buy the whole set, covering practically ten years, at cost, \$20." If any one of our readers wishes these volumes they will do well to write Mr. Lingard at once.

A new book has just reached our desk from the Macmillan Company, 66 Fifth avenue, New York, entitled "Field Crop Production," by George Livingston, assistant professor of agronomy, Ohio State University. This book is intended to supply in convenient form general information regarding the subject of field crops, for use in agricultural schools and in elementary courses in colleges. The book contains over 400 pages, is handsomely illustrated, bound in cloth, and sells for \$1.40.

Our subscription list is still booming along. During the past week we have secured more than 200 new paid subscribers to the PACIFIC RURAL PRESS.

A note from the Berger & Carter Company of 504 Mission St., San Francisco, states that their firm has been appointed general agents for the Pacific coast for the Sprague Canning Machine Co. A full line of canning machinery will be carried in warehouse by the Berger & Carter Company, who will also make a dis-

play of the machinery at the time of the Panama-Pacific Exposition.

Some of our readers evidently do not understand the scope of our new book of "One Thousand Questions in California Agriculture Answered." To give a better idea of the book, we quote headings of the nine separate parts: Fruit Growing; Vegetable Growing; Grain and Forage Crops; Soils, Irrigation and Fertilizers; Live Stock and Dairy; Feeding Animals; Diseases of Animals; Poultry Keeping; Pests and Diseases of Plants. These different parts are made up of practical farm questions and answers, all indexed that they are easily located and ready for quick reference. This book should be in reach of every farmer, and the price of \$1.50 post-paid, was made with that end in view. Send to us for our special subscription offer in connection with the book.

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100 TONS and upward per acre is the yield of Cactus. Start your patch now. Cactus is ten times as prolific as alfalfa (minimum estimate), every bit as nutritious, and grows on the poorest soils. We sell the genuine Burbank varieties. El Dorado Cactus Nurseries, Cupertino, Cal.

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WANTED—Responsible party to take charge of our business in each county handling sale of Automatic Combination Tool, a combined wire fence stretcher, post puller, lifting jack, etc. Lifts or pulls 3 tons, weight 24 pounds. Sells readily to farmers, shops, contractors, etc. No experience necessary. Descriptive catalogue, prices and terms free upon request. Harrah Mfg. Co., Drawer O, Bloomfield, Indiana.

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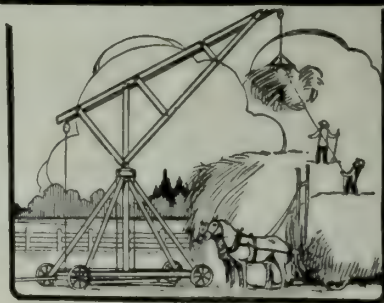
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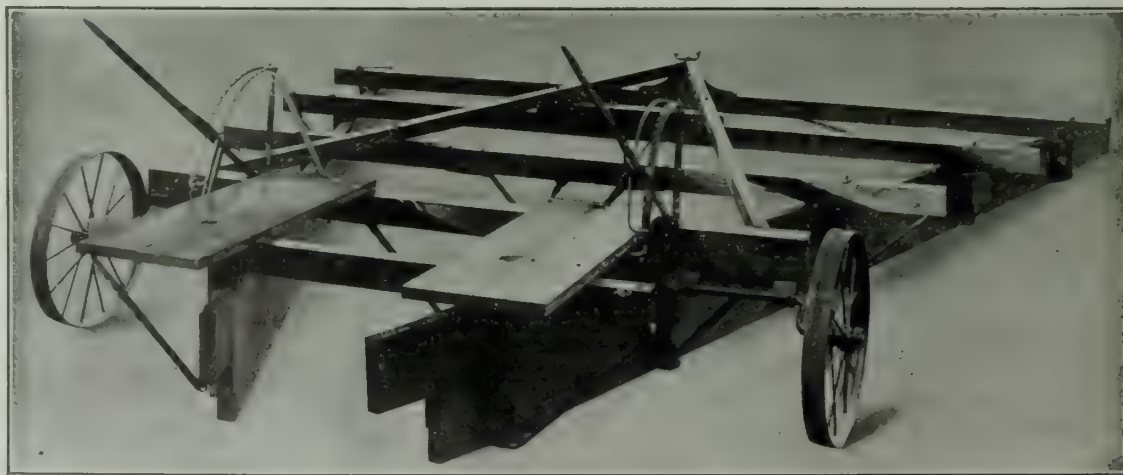


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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 20.

SAN FRANCISCO, SATURDAY, MAY 16, 1914.

Forty-Fourth Year.

How a Successful Almond Orchard Was Made.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

With the State Almond Growers' Exchange turning down Eastern orders for almonds, because they fear that in this year of abundance they will be unable to supply the demand, it is not strange to find communities like Orland, Glenn county, where almonds have been profitably grown for twenty years without irrigation in half a dozen orchards sprinkled about town, suddenly increasing their holdings to 500 acres at present and planting more of these than any other fruit. Feeling their strength at the marketing end during the past year or two, there is almond optimism wherever these nuts are grown. This optimism is further justified by the fact that 98 per cent of all American almonds are grown in California.

The pioneer in this revived planting industry at Orland is P. D. Bane, who planted 33 acres twenty years ago, has taken care of a far-famed orchard all that time, and is even now growing his own nursery trees to set out 60 acres more. This 60 acres has been leveled, checked with levees 26 feet apart, and planted to alfalfa, which will pay the upkeep of the orchard until the fifth year of the trees, when they will pay dividends in nuts.

An almond orchard seen by the writer near Chico, had half of the land cropped to alfalfa for a few years, and the trees were most markedly dwarfed, but Mr. Bane believes this due to lack of water.

As Orland is under a government irrigation proj-

and there was plenty of water last winter. More the planting of twenty years ago, the soil was plowed 12 to 15 inches deep, using ten or twelve horses. The soil is gravelly, four to ten feet deep, underlaid partly with gravel and partly with clay. Differing seasons make one or the other part yield most, according probably to the moisture retained.

The field was harrowed and staked for trees in 25-foot triangles.



Harvesting Almonds in the Bane Orchard.



View of 20-Year-Old Almond Trees of P. D. Bane, Orland.

ect of 20,000 acres, supplied from an ample reservoir, there will be plenty of water for both the alfalfa and the trees. Perpetual water rights on this project cost \$45, which is now being paid in yearly assessments, whether water is used or not. The assessment plus upkeep was \$1.25 last year and \$2 this year.

Yields from Mr. Bane's old orchard in the past eight years have twice been 20 tons, and have averaged \$100 net returns, per acre, for that period. They were never irrigated until August, 1913, a year when crops were excessively light there on account of the two dry years in succession. The old orchard was never leveled for irrigation, and it presented a problem which was overcome with considerable labor. The new orchard is fixed for dry years. The old one will not be watered this year because the roots run deep

The new orchard will be planted in 30-foot triangles. More trees can be planted per acre this way than by the square method, since the ground is more evenly apportioned to each tree.

Holes were dug deep enough to set the trees as they had been in the nursery, which was easy on account of the deep plowing. The bottoms of the holes were loosened one spade deeper, so the roots had a fine chance to begin growing. Top dirt was kept separate from subsoil. In the new orchards a six-inch

"plow sole" is found where horses have tramped in plowing and where the plow has never reached. Holes must be dug through this.

Common almond pits had been planted in December or January over a year before the orchard was set out. Bitter almond stock was then little used, but is being used in the nursery for the new orchard, because Mr. Bane believes they are hardier. Peach roots are not favored because of apprehension of short lives of peach trees—which, however, is not always justified.

By the following June the seedlings were grown to 1/4-inch diameter and were then budded to Nonpareil, IXL, and Ne Plus Ultra. The Nonpareil are discarded for the new orchard in favor of Drakes

(Continued on Page 570)

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W. H. SCHRADER - - - - - Adv. Manager

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 12, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maxi-mum.	Mini-mum.
Eureka	.06	34.91	43.58	68	46
Red Bluff	.30	32.83	23.95	88	50
Sacramento..	.00	19.32	17.84	86	48
S. Francisco..	.02	28.96	21.70	70	48
San Jose.....	.06	19.04	16.32	80	44
Fresno.....	.00	10.78	9.31	90	48
Independ'ce	.00	11.94	9.15	80	44
San L. Obispo	.00	30.94	19.95	74	44
Los Angeles..	.00	23.51	15.38	74	50
San Diego.....	.00	9.80	9.77	66	52

The Week.

Midsummer activity in agriculturally educational affairs seems to be a growing mode. What the contrast means to the country and the individual, when you note the difference between the old idea that the farmer needed no education himself and could only spare the time of the kids for a few weeks in the dead of winter, and the new idea of summer schools of agriculture for adults and school nearly all the year for the youngsters, we do not quite know and will not undertake to seem wise about it. The facts are, however, very striking and worth thinking about. Popularly, it is counted a pretty backward State which does not provide for summer schools of agriculture as well as winter schools, or short courses, which have long been popular. In one way it is thoroughly rational, because the teaching is better. It does not so much matter perhaps in California where the seasons are less marked. We have never tried to teach practical field work under glass with steam heat, as Eastern colleges used to do. With them a summer school in field or orchard, to teach field or orchard work, has demonstrated itself to be the only reasonable recourse. The attendance at such schools of real farmers and their children shows that a way has been found to take instruction during a part of the year which was supposed to be altogether unavailable for it. This fact probably indicates at least two things: the fuller recognition of the value of education as an agricultural agency and the greater prosperity of the people which enables them to set apart the time for it. These things are as evident in California as in other leading States of the country, and our summer education in agriculture is developing as rapidly as in other States where the winter is not a growing season as with us. The conclusion seems to be that though we can teach

in our winter many things which other States cannot, we are not thereby relieved from teaching other things at other times, viz.: at the time when each of them can be best taught because it is the time for the doing of it in the industry with which it is connected. It is clear then that in California we shall advance toward continuous teaching in the arts of agriculture though the science of it may be set for seasons of greatest leisure. Each item of the art will be taught at its own best time for demonstration and illustration, to those who particularly desire to know that thing and the elective system of equivalents will enable individuals to attain similar academic recognition and reward by different routes. We shall therefore soon come to going to farm schools all the year, and the ages of those now participating warrant the other conclusion: that we shall soon be going to farm schools all our lives.

A Great Summer School for Grown-Ups.

The movement toward the end indicated is discerned from the modified form of the California Fruit Growers' Convention which will be held on the University Farm, at Davis, during five days beginning Monday, June 1. The meeting is to be somewhat longer than such conventions usually are, but the greater difference is the laying out of the time in educational form and in connecting exercises so as to systematically cover a subject. At the same hour each day of the week, the same subject will be pursued from beginning to end. Several subjects will be proceeding simultaneously in different assembly rooms, so the attendant must choose for himself which subject lies nearest to his personal interest. Since more than one hundred and fifty separate lectures are to be delivered, it will manifestly be impossible for one person to attend them all. These exercises occupy chiefly the mornings from eight o'clock until noon. In the afternoons there will be many field demonstrations, meetings of growers organizations, informal conferences, etc., on pertinent subjects. The main object of the whole convention will be to provide practical and thoroughly up-to-date information for both new settlers and experienced growers, with plenty of time for discussions. Important economic questions, such as labor laws, marketing methods and policies, will be deeply gone into. Those who attend the meeting can make arrangements for board and lodging on the University Farm at minimum cost, and transportation will be at reduced rates. Send to the University Farm, Davis, California, for a full program and go to it.

Asking Bread and Getting a Stone.

We would like to laugh if it were not such a serious matter. You remember, of course, how the Middle-Westerners were driven to free trade during the last presidential campaign by the continued shouting that protective duties were only of benefit to the trusts and to the "millionaire California fruit growers." They went after it, too, like a lot of sheep, and there is where the sadness begins. For though importations of all things which we ought to produce for ourselves have hurt local values in many lines, there has no such picturesque stroke fallen as the bolt which has been landed right in the corn fields of the Middle West because our country has been declared free for all the world. Eastern ex-

changes point out that for the first time in our history, corn is being imported, partly because it is now admitted duty free, compared to the former tariff of 15 cents per bushel, partly because of the unprecedented shortage in our 1913 crop. Imports of corn during the three months, November, December and January last, were 6,500,000 bushels, compared to a total of less than 1,000,000 bushels for the whole of previous fiscal year. The result is not only a drop in corn which prevented Western growers from getting price-compensation for their short crop and has struck them with a fright that their occupation may be gone. This is not justified, for there is a doubt that the Argentine can really go far in corn as compared with our own great capacity, but still it has mixed up things beautifully and the Western farmer is now not quite sure that protection is only good for trusts and millionaires. He ought to have known that before. As for the trusts, you do not seem to be able to hit them that way. Orange Judd Farmer says: "Nearly three times the usual number of cattle have come in during the three months under free trade, besides which the fresh beef imports were equal to about 49,000 head of live cattle. Much of this beef has come from abattoirs in Argentine, owned by Chicago interests and consigned to their representatives in New York." American feeders are putting free trade corn into free trade animals as "feeders," and will make some saving that way perhaps—but as for the "trusts"—oh well! You cannot catch them by molasses spread on political platforms. It looks as though the trusts could get more sweets by working under the platforms.

Californian on the Reserve Bank Board.

It should gratify Californians that President Wilson has appointed a citizen of this State as a member of the half dozen financial experts who will direct the operation of the system of national reserve banks, now being organized under congressional legislation of last fall. The new currency law, which provided for the establishment of these reserve banks in different parts of the country and fixed the relations of the national banks to them, has, as readers generally know of course, the purpose of taking the control of reserves away from Wall Street and rendering them available to meet financial stress in all parts of the country, and the attitude of all parties to this measure is a warrant of its wisdom and of confidence in its efficiency. As one of those who will regulate the workings of the new system, President Wilson has appointed Professor A. C. Miller of the University of California, who is now on a leave of absence, discharging the duties of Assistant Secretary of the Interior at Washington. We are pleased with Professor Miller's appointment, not only because of his general competence in banking and financial affairs, of which he has been a competent research student and able teacher for many years, but because he has the true Californian respect and regard for agriculture as an industry and by close contact with the industry he has a good understanding of its point of view and essential requirements. Readers will remember that in our issue of August 30 last we were sketching the work of Secretary Lane and Professor Miller while administering comfort and encouragement to the financially oppressed among Uncle Sam's new wards: the settlers upon the various national

irrigation projects. One sequence of events was thus described: "A farmer whose crops had been ruined by the breaking of a ditch bank broke down and cried as he told his story to Professor Miller. The assistant secretary proved a sympathetic listener. Making proper use of a raging thunderstorm which broke as he was addressing the home-builders, Professor Miller cried out: 'Though the heavens fall, I should not do my duty if I did not tell you that you have a friend in President Wilson, who is a Western man in spirit, if not by birth. The administration believes that the government should not only not add to the burdens of the farmers, but should lighten them wherever possible. It is a great hardship to farmers to have to borrow money at 10 per cent. We are trying to humanize the Department of the Interior.'"

Such is the field record of the man whom President Wilson has appointed to "humanize" the banking system of the country. It is particularly important that a man with such a record should be among the regulators of the reserve banks. Several propositions now before Congress look to the wide use of these reserve banks as reservoirs for agricultural credit to draw upon, under certain conditions, and if that is provided by law, Professor Miller will be well fitted to carry it out, both in its spirit and its letter. What form of agricultural credit will be passed by Congress cannot yet be known, but the President seems to be still disposed to hold Congress to it, if it takes all summer. Last summer Congress lost the vacation for tariff legislation. It looks now as though it would have been better for the country if it had gone fishing. We hope it will do better with trust-bursting and credit-building. We shall see.

What He Will Do with Eight Hours.

We dislike to be scolding all the time, so we are putting as much sugar as we can into this sour mash. There is, however, one man in California who is crosser than we are, and he writes this: "If these proposed laws of eight hours, minimum wage, compensation, etc., are to be put on the farmers' shoulders, I think it wise to dispose of my larger holdings and keep a small place on which I can do all my own work, and work as many or as few hours as I like. I have only 70 acres, but by getting down to five or six for a home and orchard, I can have something to invest and be much more comfortable." We have no doubt that idea is entering into many calculations now. The farmer can stand it that way. He is about the only primary producer, besides the hunter and the fisherman, who can live on his product by eating it, if he cannot make it sell at a profit, but, then, what will become of other people who have appetites? It does not behoove the world to make the farmer real mad: he is the only chap in the world who can frame up a perfect boycott. And then there is evidence to prove that a farmer can get real mad over taxation as well as labor laws. The story comes this week from Colorado that Ed. House has actually given away ten acres of good land west of Evans to two employees at the county court house. When House went to the office of the County Treasurer to pay his taxes and discovered that the land was assessed, under the new Colorado system of full valuation, at \$50 an acre, he became indignant, and declared that he would rather give away the land than pay

any such sum. He made this assertion in the presence of the two clerks, and now they are the possessors of this real estate. They thought he was joking until he handed over the quit-claim deeds to them.

Of course Mr. House has the advantage of others, for he can give away his land and live in his name, but we must advise the general public that farmers may be dangerous people when they get thoroughly roiled, and there are a good many of them who think they are getting about all they can stand, right now.

Queries and Replies.

Querists must submit full names and addresses.

Why Not Tea in California?

To the Editor: I would be glad to know what effort, if any, has been made to establish tea-growing as an industry in California? What obstacles, if any, have been met, and what sections are promising for the culture of this crop?—Reader, San Francisco.

So far as we know, there is only one objection to tea production in California, but that is insuperable. Tea plants have been successfully grown in the State ever since the pioneers of 1850 were attracted to the industry, and some tea was made over fifty years ago near Coloma in El Dorado county. Since then the plant has been grown as an ornamental in different parts of the State, and it has been demonstrated to succeed both in coast and interior situations. The requirements for a thrifty plant are good soil and moisture enough for a free growth. The plant is quite hardy, but we believe that in order to get at the proper sort of a leaf for tea-making, such growth as the Asiatics get by a generous treatment of the plants would be requisite.

The insuperable objection to growth of tea in California is the cost of labor. Probably labor in California would cost five to ten times as much as in eastern Asia. It has been claimed for the last thirty years or so that much of the hand labor required in Asiatic tea-making might be dispensed with by the introduction of American machines for manipulation. This was undertaken in South Carolina about ten years ago and experimental productions of tea were made for several years. Recently, however, it has been wholly lost sight of and apparently did not realize the anticipation of the projectors. Probably California is naturally better adapted for tea-growing than the Gulf States, but this seems to be of little avail while we have no supply of cheap labor for tea-making.

Dodder on Wild Shrubs.

To the Editor: We are greatly bothered with a parasitical vine known as the "love vine." We have about 1100 acres in this tract, near Santa Monica, and this pest is scattered over nearly the entire place. It seems to suck the life out of the shrubs, mostly wild plants such as Sumac, etc. Can you give us any directions in regard to control or eradication of this pest?—A. R. C., Sawtelle.

We are not aware that there is any experience available in methods of moving dodder from shrubs such as you mention. It is known that the nature of the plant is to start from seeds in the ground, attach itself to a host plant, making growth, blossom and seeds, which when ripe fall to the ground and start the cycle over again. If the plant is torn away

from its host before it has a chance to make its tiny blossoms and seeds, that will be the end of its kind. How successfully this can be practiced, you will have to determine by experiment.

Olives in Lake County.

To the Editor: I have Manzanillo and Nevadillo olive trees in Lake county which are about fifteen years old and of very vigorous growth. But the bloom falls from them generally, and very few berries ever stick and ripen. One year (1905) one corner of the orchard bore very heavily and I gathered 12 or 14 barrels from a few trees, but since then I have not had more than one barrel any year, and often not that. If there is any reason that you can conjecture for that failure, I would be very glad to be advised of it. I had one Mission olive tree that bears quite well usually, and it may be that the failure is owing to the variety. The trees have a very healthy and luxuriant appearance. The temperature never gets below 24 degrees.—H. D. M., Vallejo.

The temperature you mention would freeze the fruit, but would not injure the tree. The Mission variety is generally better in bearing everywhere than the Manzanillo and Nevadillo, and this is one of the reasons why the Mission is one of the most popular varieties to plant at the present time. Other varieties have been very widely grafted over to the Mission to secure more fruit, and that would naturally suggest itself as worthy of your consideration, especially as you have a demonstration of the behavior of the Mission on your own place and trees from which scions can be taken for grafting other trees.

Nitrate of Soda as a Plant Stimulant.

To the Editor: Please advise me of the best fertilizer to use as a stimulant for olive cuttings in the hotbeds, also in the nursery rows, and the requisite strength of the solution. I understand that nitrate of soda is used for this purpose. Also, where can it be bought?—Grower, Tulare.

Nitrate of soda can be used as a stimulant for almost all plants, but one has to be very careful not to use it in excess. The common prescription is 200 to 300 pounds per acre, and you would be safe in using such an amount as would be proportional to the area which you have in these plants, scattering it very sparingly before sprinkling or irrigating and watching the result. One ounce to one square yard of surface can be used on small areas. It dissolves almost immediately upon contact with water and is distributed by a good shower of rain or an equivalent amount of overhead sprinkling. It can be bought of any dealer in fertilizers at prices much less than you would pay at the drug-stores, although probably any druggist could also get the ordinary commercial article for you at much less cost than the chemically pure which he uses for prescription purposes. You must be careful in the use of it because an excess would cause a too rapid growth and more than that would kill the plants.

Seedling Japanese Persimmons.

To the Editor: Can you grow edible fruit from the seed of Japanese persimmons?—J. R., Sebastopol.

Seedling Japanese persimmons will bear edible fruit, but it will generally be inferior to the fruit from which the seed is taken; therefore, to secure particularly desirable varieties, the plants must be grafted just as other fruits are.

Tractor Demonstration.

[Written for the Pacific Rural Press
by R. E. HODGES.]

Ideal weather and soil conditions marked the opening day of the tractor demonstration at West Sacramento, Thursday, May 7. Several hundred people watched the gang disk and moldboard plows turn the tulle soil which was in just a good crumbly condition. The tules had been mowed from the level fields and burned so there was but little interference. Ten-acre lots were staked out and assigned to the various machines under supervision of Prof. Fred Peterson of the University Farm, who had general charge of the operations.

The electric railway was a bit slow switching the machines to Tractor Station, so that many were delayed and only four of the 13 firms which were entered, had tractors actually turning dirt.

The C. L. Best Co. of Elmhurst, Cal., was the first to break ground; they plowed a headland of eight 10-inch furrows, from the road to their lot with a 70 hp. all-steel "Track-layer" which was the only machine they entered.

It crawled away irresistibly a little later with three John Deere gangs of four disks each, and after plowing several rounds hitched to three gangs of moldboard plows which turned dirt beautifully. One trouble noticed on the gangs was clogging with dried tules, and it was noticeable that sometimes one of the disk gangs would plow shallow a little way and then perhaps go too deep, with the same adjustment. It seemed that part of this trouble was due to the connection of the gangs one with another by means of heavy flat drawbars, bolted to the ones in front. These bars would pinch on uneven ground. Other machines used chains and cables to connect the gangs in the string.

It was noticeable also that where a gang of four disks or moldboards was fastened rigidly, to one cross bar, uneven spots were unevenly plowed, some places being scarcely scraped off. Some machines minimized this by having the plows in gangs of two each working up and down independently of the other. One man operated the three gangs while another watched the tractor.

In the Best tractor the cog wheel driver works over spools on the inside of the track. These spools rock on a semi-cylindrical axis which is claimed to make it more durable. Openings are left beneath and between the track links, so that mud and sand are irresistibly shoved out. Neither mud nor sand, however, was encountered on the field, though the weight of the tractor settled it, always rather noticeably in the peaty soil. The speed at work is about 2 1/4 miles per hour; and may be half a mile faster on the road.

The Holt Manufacturing Co. who have factories at Stockton, Cal., and Peoria, Ill., were there with four of their "Caterpillars", which burn No. 1 distillate. One is 75 hp., two 60 hp., and one 30 hp. The last named is their Baby, with a very few minor changes from the first caterpillar ever invented, and which they put on the market about five years ago. The Baby walked around its field for an hour or two, doing splendid work with a 4-disk gang, operated by one

man while the tractor was operated by another. Its track links are connected by cylindrical pins in the simplest fashion possible, but with no openings below for mud to squeeze out. It must squeeze back the way it came on this tractor. The three pairs of wheels on each side of the machine, on which its weight rests and which run along the linked rails on the inside of the caterpillar track, are encased to keep out falling dirt as the track revolves, and are boxed so that the weight of the engine is equalized on all the wheels, by a pivot axle allowing about 6 inches of play for rolling ground. The Baby is 15 feet long and can turn in a 14 foot circle, though of course a plow can't follow it in such operations.

The cover is removable for orchard work, and this being the smallest of their make, is designed largely for that purpose. It is guaranteed to pull as much as 14 horses. A belt wheel is attached so it may be used as a stationary engine.

The Holt people are working on a still smaller size, a 20-hp. "Midget" which will be on the market soon. They make two-speed engines on special orders, since it is claimed that many farmers use them to haul hay and grain to town. About 3 1/4 miles per hour is as fast as the caterpillar type can well travel anywhere.

The 75-hp. machine plowed with two 5-gang Holt disks, connected by chains, to each other and the engine. The two 60-hp. tractors arrived too late to get into action Thursday.

Besides the engines, the Holt people had three 6-gang and one 4-gang Davis disks, three 4-gang Haines Special moldboards, one double disc harrow, and 100 lineal feet of wood bar harrows. Nine Davis disk plows and one Baby Caterpillar were sold early in the day. The factory is making three tractors per day but was 60 behind orders on May 7.

Two Yuba Ball Tread Tractors made in Marysville, were on the ground early in the afternoon and one did considerable plowing. This was the 35-hp. Model 12, pulling as much as 12 horses on a 5-disk gang, all disks on one bar. The 55-hp. Model 18, which pulls like 18 horses was held in reserve. The tractor itself responded to the driver like a thoroughbred.

The noticeable difference of these from other caterpillar types is the substitution of balls, on which the weight rests as the track revolves. The chance of getting mud and sand into the ball bearings seems to an outsider to need remedy by enclosing those parts more closely, but the Yuba people claimed and showed that the mud is forced out as the balls revolve. They are low built machines, very practicable for orchard work.

Probably the most spectacular exhibition of the day was this machine whirling around like a dog after its tail. The inside caterpillar track revolved around a space one foot in diameter, while the single guide wheel in front followed its own track in several speedy revolutions. These engines burn No. 1 distillate.

The Samson Mfg. Co. of Stockton feels well satisfied with the one type they make, of which two machines were on exhibition. They have 30-hp. engines and are modestly guaranteed

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to pull as much as 8 horses under any conditions—soft dirt, mud, up hill, etc. Dynamometer tests have shown them pulling as much as 15 horses. Power is applied to the ground by "sieve tread" wheels, made by bolting angle irons about two inches apart on double-circular angles which form the rim of an open wheel. In sand or soft ground alternate angles are taken off, so that a stronger grip is obtained.

One man operated the engine and the two moldboard plows, which were furnished by the Killefer Mfg. Co. of Los Angeles, who also exhibited a subsoiler and cultivator. Dirt was turned about 9 inches deep, well and without difficulty. The operator, Fred Hoff, recently plowed 600 acres of vineyard alone, the last 300 acres costing \$32 for distillate and \$12 for lubricator oil. In Orange county recently, a two days' demonstration was made in a 40-year orange orchard where the branches from neighboring rows interlocked, and the orchardist was so well pleased that he paid cash for the tractor at the end of the demonstration.

The history of this machine is of interest. The first Samson tractor was put on the market three years ago. The large tractors then made did not seem adapted to future California conditions, and a two-cylinder, marine-type stationary engine, to pull as much as a four-horse team, was designed. Mechanical power was so convenient that the farmers demanded more of it, and a six-horse pull, 18-hp. three-cylinder engine was put on. A number of these are in use in California now. But it was found advisable to enclose the working parts and make an eight-horse pull tractor, of four cylinders. This was first put on the market last December, and seems adapted to the average farm. A belt wheel may be used from the tractor as a stationary engine, to grind barley, cut silage, or run the tractor from one well to another, over a ranch to pump water for irrigation. The entire Samson machine is a California product from the foundry to the paint, except the lubricator and magneto. It also has a safety crank for the engine.

Two elephantine Rumely Oil Pull, kerosene-burning tractors from LaPorte, Ind., were gotten ready so late that little if any plowing was done. The wheels of the 60 hp. are 6 feet in diameter and normally 2 feet wide. A one-foot extension was put on them for the tule field. It pulled eight Rumely plows in independently hung gangs of two moldboards each. The other tractor is a 30-hp. machine.

A 20-hp. Avery from the Babb-Carter Co. of Oakland was on wheels 20 in. wide. It started to work, but got in a soft place where water had stood beside the road and had to be pulled out. It can do good work on the regular fields.

Fairbanks, Morse & Co. unloaded, at 4 p.m., a 40-hp. and a 20-hp. distillate burner, but did not get to the field till Friday. They had a 4-hp. gas engine and pump on the grounds earlier.

The International Harvester Co. had a 25-hp. Mogul tractor, the machinery of which is entirely enclosed. It did not get into action. They also exhibited a 10-ft. double disk harrow, a five-moldboard Oliver gang, and a Flying Dutchman plow.

John Deere gang plows, double disks for clover cultivation, and other cultivating machinery were in use be-

hind various tractors.

The J. I. Case Co., of San Francisco, unloaded a 20-hp. and a 40-hp. tractor late in the afternoon. Others that are entered but did not exhibit much the first day are the Golden Gate Gas Traction Co., of Berkeley, with a six-horse pull distillate burner; the Smith-Booth-Usher Co., of Los Angeles, with a 14-hp. distillate burning Lambert tractor; the H. C. Shaw Co., of Stockton, whose 40-hp. Flour City tractor was somewhere on the road the first day of the demonstration.

The Benicia Iron Works had entered plows, and the Baker & Hamilton Co., of San Francisco, furnished the plows pulled by the Yuba tractors.

A 4-cylinder, 25-hp. Bacon tractor ran nicely out on the field late in the day, but had to wait for cultivating machinery to come. This machine was made in the East for the E. R. Bacon Co. of San Francisco and Los Angeles, and is their first venture in the tractor line.

[A further report of the last two days will be found in the Agricultural Review columns on another page of this issue.—EDITOR.]

GUMMING OF CITRUS TREES.

To the Editor: Two of my two-year Washington navel trees are gumming near the buds, otherwise healthy. One was barked some time ago and never healed. The wound was covered with gum and that attracted notice. On examination the outer surface of the bark was found to be softened and was covered with dark spots. Digging into the spots with a knife showed the bark and wood very soft. Before the softness disappeared and hard sound wood was reached holes varying from a quarter to half an inch had to be made. We found nothing in the way of a borer. After cleaning out the soft and darkened tissue and scraping off softened portions of the bark we painted the whole surface with the Bordeaux paste described by Mr. H. S. Faucett in the PRESS recently. I would like to know what the trouble is, its cause, and whether I have applied the proper treatment. Also what is the chance for recovery?

Rialto.

D. M. E.

[You have proceeded most intelligently and the prospect is for good healing.—EDITOR.]

IS THE TROUBLE AT THE TOP OR THE BOTTOM?

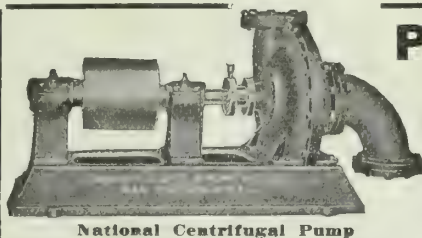
To the Editor: I have quite a number of Imperial prune trees which are grafted on apricot stock on Myrobalan root, portions of some of the trees, especially towards the top did not leaf this spring, but some small leaves are just coming now, others are still bare, and are still alive. As the orchard is rather flat, I thought perhaps it is owing to the water lying there too long during the winter. Will you kindly give me your opinion in the matter.—A. W. B., Vacaville.

[This is hard to answer. The myrobalan ought to stand a good deal of standing water—still it may have had too long soaking. At the same time there is a chance of the cause being frost after the sap began to move to the top. If good leaves are coming now, the trees will probably pull through. All wood not yet starting should be pruned back to live parts.—EDITOR.]

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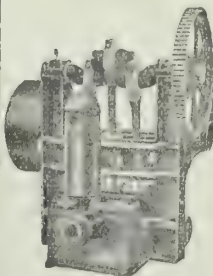
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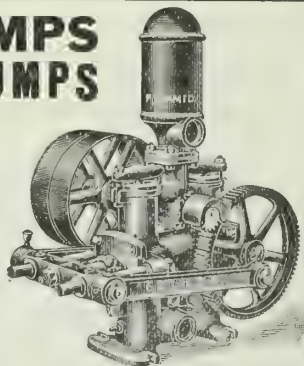


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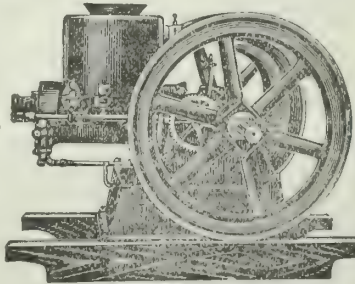


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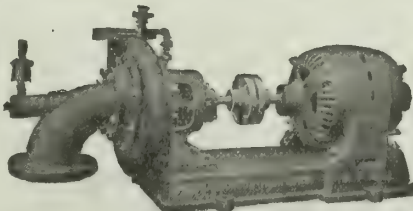
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How a Successful Almond Orchard Was Made.

(Continued From Page 565.)

Seedling. In both cases Mr. Bane knows they are true to name because he did the work himself.

Two points are important in budding: one is to have the stock old enough, the other is to have a mature bud. These are not so easy to get in June, but June-budded trees are greatly preferred to those budded in October. June buds make good growth the same year and are ready to set out in orchard the following spring. In using the customary nursery tree digger, the roots are not cut off as they would be if older when dug. October buds remain dormant till the following spring, needing an extra year before they are ready to transplant, and their roots are torn in digging. Having larger roots, larger holes are required, which is considerable expense on 60 acres. Most nurserymen, however, bud in the fall, and the nursery for the new orchard was budded last November, due to lack of time in the busy summer season.

Nonpareils are discarded because they are alternate bearers for Mr. Bane. Their thin shells make them more subject to attacks of birds and insects. They crack open when ripening, and worms often spoil the meats. Pieces of the outer of their two shells often break off in the hulling machine, and it takes more nuts to make a ton because they are lighter.

Three varieties are chosen, for pollination. Drakes are the strongest pollenizers, and should be placed in the outside rows to surround the others with pollen-bearing blossoms. IXL especially needs to be surrounded by strong pollenizers.

Figuring all points, however, Mr. Bane prefers IXLs because they are cheaper to harvest, being mostly hulled when they fall. They ripen with Nonpareils before the other varieties, they grow more upright, and might be planted closer together. They are likely to have some shriveled meats, and the Ne Plus often have double meats, defects from the confectioner's standpoint, who wishes plump single kernels.

In the selection of varieties it is very important to get a succession in ripening. IXL, Ne Plus Ultra, and Drakes ripen in the order named, one after the other, so that a crew may be kept busy in an orchard from first to last crop, gaining the labor advantage of familiarity with the orchard and with associates. There is a lull between IXLs and Drakes, during which Mr. Bane one season let his crew go for a week. He could get only half of them to come back when Drakes were ready, and had to break in new hands. Nonpareils ripen about the same time as IXLs, but their hulls tend to close again, so they are harvested first.

In preparing the tree to plant, Mr. Bane says: "I never look at the top; what I want is a good root system. With that, I can make the top. I do not use trees that have sprouted new leaves, for that indicates new fiber roots which would die and set the tree back. Early planting is necessary."

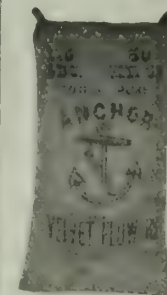
All roots are cut slantingly as long as a uniform length of all can be obtained. This is about 12 inches on June-budded trees and 18 inches on yearlings. The cut is on the under side so it will press into the soft earth. If any roots are left longer, they are turned toward the prevailing wind to keep the tree from blowing over; but this point is secondary to the idea of setting the same side of the tree toward the southwest sun, as it was in the nursery. The bark on that side has been toughened and is not so likely to sunburn, as often would happen between 1 and 5 p.m. All fiber roots are cut off. The roots are spread out as much as possible and top dirt is packed tightly around them and up under the crown. No clods are allowed here, for the drying roots they would cause are the ruin of many new orchards. The subsoil may be put on top or thrown away. Mr. Bane does not believe in using water, as the soil is usually moist enough, and water added would harden the soil. However, if it is dry, sticking the roots in soft mud

is good just before planting.

The new orchard will be set on the levees which now serve as checks for

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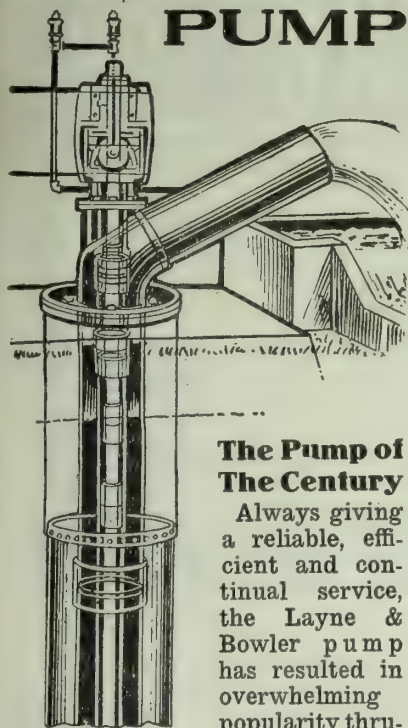
The salt more than pays for itself in the weight of the hay. There is a further gain in weight through moisture held—and the stock will eat up salted hay clean where unsalted hay will be mussed over and wasted

20 pounds of salt should be used to each ton of hay. Stack three feet of hay, sprinkle the salt over this by hand. Then another layer of hay, more salt, and so on.

IT PAYS

Experiments carried out at the Wisconsin experiment station indicate that salt should be supplied to dairy cows unless the ration furnishes a sufficiency thereof. It is calculated that the minimum quantity in the food to keep a cow of 1000 lb. live weight in flourishing health is that which is equivalent to $\frac{1}{4}$ oz. of salt per day, and that a cow in milk needs as much more as will restore the proportion removed in the milk, namely, a little over $\frac{1}{2}$ oz. of salt for every 20 lb. of milk.

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the alfalfa and are left bare 18 inches to 3 feet wide.

After planting, the tops are cut off 12 or 16 inches, a slanting cut being made close above a bud, the slanted surface facing northeast to avoid the direct rays of the afternoon sun while healing. This puts the top bud to the southwest and serves to shade the young trunk more or less. If the cut is made midway between buds, the pith begins to rot and there is a die-back which may injure the tree seriously. For the first year, shakes are set on the southwest side to protect from sunburn, though almonds are not so tender as apples and pears. No protection is needed at Orland in the second year, if proper care has been given the first.

The head is formed the first year, low down to shade the trunk, to reduce danger from wind, to shade the ground, saving moisture and preventing baking, and to make picking easy. Three or four branches are left; late in the season when the new wood is about 2 feet long and maturing for winter, all branches are gathered up from their drooping position and the whole top is tied, low down, into a goblet shape with binding twine. Should the twine be passed entirely around any branch, it must be watched or the branch will be choked. The tying tends to produce a desirable uprightness of growth.

In winter they will be cut back to 12 inches, for the object in the first three years is to get a stocky trunk and a vigorous widespread root system. This short pruning is continued two winters more, and from that time on the only pruning is to cut out dead and crossed limbs and the water shoots which sprout from the main branches and trunk.

Need of utmost care and attention at planting and for the first year or two, was repeatedly emphasized by Mr. Bane, who has seen many orchards grow up about him as well as in other sections. Special and continual cultivation is necessary. Many people just stick the trees in and let them grow, hoping to have a crop. They get runted at the start and never do well. Many die at an early age, leaving gaps in the orchard which are very hard to fill. A young tree has little chance in competition with older trees for air, sunshine, moisture, and plant food. It detracts from the value of the orchard by making it uneven. The work of the first and second years fixes the value of the almond orchard.

FULL CROP OF PRUNES.

[Written for the PACIFIC RURAL PRESS.]

"Why are your prunes so nearly a full crop when all the rest of the State has only a quarter crop?" I asked Dr. M. T. Moore, of Corning, who has retired from medicine in favor of horticulture.

"Two years ago they bore a tremendous crop in a dry year," he answered. "Last year they showed considerable distress on account of the previous year's strain. They looked thin and drooping. I saw that I might lose my trees, for they had never been irrigated. So I dug a well, installed a motor-driven pump, gave them a thorough watering about the first of October, and kept it up for a month.

"The trees took on a new appearance, new leaves came out, and some even bloomed lightly. These leaves



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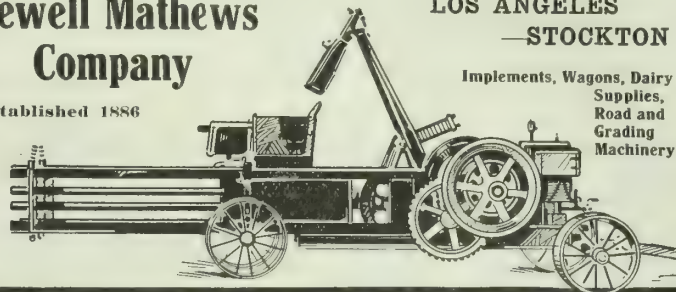
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dropped in the winter, but the trees put forth new ones earlier this spring than any others in this section. They bloomed fully a week earlier than my neighbors' prunes, and two-thirds of the orchard has practically a full crop, though they have not been irrigated since last October.

"I have another orchard tended the same as this, located across the way, which I did not water last fall; it, like those of my neighbors, has about 25 per cent of a crop. I think my full crop is due to the fall irrigation, and I shall try it again this year."

SHELLAC LARGE TREE WOUNDS.

[By H. S. FAWCETT.]

A shellac covering has recently been tried out by Harry Postlethwaite, of San Jose, California, and as reported by C. W. Towt in the Journal of Agriculture of the University of California for October, 1913, is better for the hot regions of California where ordinary grafting wax is apt to melt. The formula for making the shellac covering is given by Mr. Towt as follows: "Fill a two-quart glass jar with the flake varnish of shellac and add enough alcohol to fill the jar half to two-thirds full. Stir until the shellac is dissolved, and then stir in about a small cupful of broken or powdered rosin. The mixture should be about the consistency of maple syrup when finished. A little lamp black should be put in to make the dressing dark so that no part of the wood will escape being covered because any exposed part will be easily seen. The dressing should be kept in a closed shellac can to prevent evaporation of the alcohol. Add more alcohol if needed before all the dressing is used up." Asphaltum paint (the kind that has been made by dissolving asphalt in benzine, not turpentine) has also been found by tree surgeons to be a good covering, and Dr. Webber reports it as giving excellent results on pruned trees at Riverside after the freeze.

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129 Fremont St., San Francisco, Cal.

The Poetry of Beekeeping.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

"Once a bee man, always a bee man. You get to love your bees as your pets. If you get away from them a while and then hear them humming, there's something in your blood that draws you irresistibly to them." With such poetry, L. D. Walker soon had the writer eating unmistakable orange honey cut from the combs among the feverishly busy workers before his eyes.

Lifting lids gently, blowing a few puffs of gunnysack smoke over the tops of the frames, we investigated twelve or fifteen hives.

"Put your hand here," and bee poetry had instilled courage into the novice so that he laid his hands directly on the frames, being careful not to squeeze any workers, for be it known that females of beedom not only have no time to be squeezed, but are so everlastingly busy that they die off in six or eight weeks, being worn out.

The object of putting his hand among the bees was to feel the surprising warmth generated in the process of rearing brood and making comb and honey. This warmth is necessary for growth of the bee larvae and also for the "drawing" of comb. This is the process of making beeswax from the nectar of flowers and building it on both sides of a dividing partition into hexagonal cells of honeycomb gently sloping down and inward to hold the honey until it is cured and capped. Comb honey making in cold weather is a slow, wasteful process, because the bees must pile up on top of each other several deep over the one actually drawing comb to keep the temperature right. This requires bees that should be gathering nectar or pollen or feeding the nurslings or any of the multitudinous duties of this well ordered, chaotic-looking household.

And an important part of the poetry is that the queen, who lays 1500 to 2000 eggs a day during the honey season, and who lays even 3000 a day here in this high, dry, favorable Fair Oaks climate, this busy queen has time to superintend the activities of her 40,000 to 50,000 proteges and to say to this one "Go get pollen," to the other one "Carry out your dead, worn-

out comrades," to another "Feed my little ones with the pollen your sisters have brought and stored nearby," to another "Go get nectar," to another "Take that nectar and make it into comb for the storage of more nectar," to half a dozen others, "You are to be my private servants to bring my food to me and keep me comfortable while I work," to still others, at the end of the "honey flow," "Sting to death all the males—those that won't work can't eat any more—and take them away; for the rest of the season we will keep bachelor maids' apartments."

This queen is a jealous queen, and her subjects are instantly ready to fight for her and die for her. She gained her prestige, unless helped by human kind, by being the first of all larvae in the queen cells of that colony to hatch. Her first activities were to eat a little honey and to kill all the still unmatured, unliberated contents of the other queen cells. Being thus established, she depends on her bodyguard to supply her wants. At a certain time she has taken her "nuptial flight," on which she has mated with a drone on the wing, once for all. Thereafter, though she may live six or seven years, all her eggs will be fertile. She is also a ladylike queen and carries an air of stately distinction which makes her noticeable. Even her temper is queenly and she will not sting except on greatest provocation.

In the well ordered economy of Mr. Walker's apiaries, the principles of breeding are applied by uncapping the drone cells of all swarms which are poor producers. This kills them and leaves the breeding field clear for males of high producers. Of course, high production is figured relatively to the number of bees in the swarm.

Should a stranger queen attempt to usurp prestige or even enter the hive, workers immediately detect her by the strange odor she carries and they "ball" her.

"What is that? Is it sticking her up with honey and pollen so that she can't move?"

"No; it is making a ball of themselves with the strange queen as the center of a very hot universe, for each bee in the ball is attempting to sting her. One sting would be enough, but in the balling frenzy they sting her over and over after she is dead. If they break their stingers in the process, they may live 24 to 36 hours. If they get a good shot at a hard part of her anatomy, the stinger stays and in which case she dies in a few minutes. If the stinger was removed intact, she may use it again."

Here lies the only foolishness in these wisest of insects. They don't use their stingers with any sense of self-preservation. If angered at all, revenge or defense takes whole possession of their souls.

But even the novice may make friends with them, as witness this one, who found them crawling over his hands and wrists and up his sleeves and on his face and neck, while seeing for the first time the difference between drone cells and worker cells and queen cells, the different stages of development from the egg to the mature bee, the making of comb and honey, and getting a taste of the real poetry of apiculture.



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Irrigation Investigations.

[Written for the PACIFIC RURAL PRESS.]

Irrigation investigations have been under way in California for 15 years, counting the present season, and they have covered a wide range of inquiry. The first work undertaken was a study of the water-right situation on 7 typical stream sections with a view to bettering the water laws of California.

For a number of years after these first studies were finished, the investigations had to do largely with practical irrigation problems concerning the farmers of the State, such as duty of water, preparation of land for irrigation, methods of applying water, the distribution and delivery of water, the organization and operation of irrigation districts, the efficiency of irrigation pumping plants, and the special problems connected with irrigation of specific crops, such as alfalfa, sugar beets, grain, orchards, and small fruits. In all over 40 reports dealing with these investigations have been printed by the U. S. Department of Agriculture, the work having been done by the Office of Experiment Stations in co-operation with the Experiment Station of California and the State Engineering Department.

When the University Farm was established at Davis, a tract of 30 acres was laid aside for irrigation experiments and turned over to the Irrigation Investigations. The specific studies that have been carried on there have had to do with the duty of water on alfalfa, irrigation of grains, irrigation of orchards, irrigation of vineyards, irrigation of corn, and irrigation of potatoes, crop rotation under irrigation, water requirements of crops as determined by tank experiments, and the measurement of water for irrigation purposes. Bulletin No. 10 of the U. S. Department of Agriculture gives the results of these investigations through the season of 1912. A bulletin describing the various standard measuring devices that have been installed at Davis, with a statement as to their relative accuracy, is now being prepared for publication by the California Experiment Station. Another bulletin now in course of preparation deals with irrigation possibilities in the Sierra foothills.

In 1910 the Irrigation Investigations co-operated with the Bureau of the Census in taking the irrigation census of California and the year following it co-operated with the State Conservation Commission in issuing a general report on the irrigation resources of California. The last named report is known as Bulletin 254 of the Office of Experiment Stations and was issued by the Department of Agriculture at Washington. It lists all of the agricultural areas of the State from Del Norte and Siskiyou to San Diego and Imperial, and carries maps on a large scale showing irrigated and irrigable areas of the State as they were in 1912, together with the principal canals. The report also gives the results of detailed studies of the use of water on 6 typical streams extending from Siskiyou to Santa Ana, with maps of each of the 6 streams covered showing the irrigated and irrigable areas and all of the ditches and pumping plants. Any of the bulletins that have been issued are for free distribution so long as still available on application to Irrigation Investigations, Berkeley, California.

Just how the farmers of the State

can individually make use of the Irrigation Investigations depends entirely on the particular needs of each. Many write to the division for specific information as to how to irrigate under given conditions, as to what the water supply available is to various sections, as to the cost of water under the various systems, as to the best methods of applying water, as to the best methods of measuring water, as to the way to obtain a water right in California, etc. Others desire information as to the best type of organization for communities desiring to build their own irrigation system; whether it is best to organize an irrigation district under the State law, a mutual water company as used so extensively in southern California, or a corporation to sell water for profit. Others request talks on irrigation methods or needs in particular localities.

One of the principal interests of the Irrigation Investigations is in helping to improve the water laws of the State. The division has taken an active interest in the water commission law prepared by the State Conservation Commission and is doing all it can to bring about the approval of this law at the referendum vote in November. It has also worked with the State department of engineering in helping to improve the irrigation district laws of the State. Just now, among other things, it has considerable interest in land settlement conditions under the various irrigation projects of the State.

WANT TO TRY THE TEPARY BEAN.

It is quite possible that the Tepary bean may do as much for California as they are expecting from it in Arizona, and readers may like to try a few this spring to see what its local promise is for a field crop. You can get the seed from seedsmen advertising in the PACIFIC RURAL PRESS.

We have given accounts of this bean in earlier issues but the following may serve as a reminder: Prof. C. F. Freeman, plant breeder of the Arizona Agricultural Experiment Station, holds that thousands of acres of dry-farming land are adapted to this native bean which promises to become one of the staple crops of Arizona. The farmers of the semi-arid Southwest will not realize the full worth of the Tepary bean until its excellent food value is more widely known. Being a dry-land bean it naturally is somewhat harder, heavier and requires a little longer to cook than the ordinary pink bean. On the other hand, in cooking, it swells more so that in the end it is just as light and mealy as the navy. A given weight of teparies will produce 40% more cooked beans than the same weight of either Michigan or New York grown product. Two pounds of teparies will therefore go about as far as three pounds of other sorts in filling cans or hungry mouths. This more than offsets the slightly greater length of time required to cook them. All beans should be soaked in water about twelve hours before cooking. Chemical analysis shows the tepary to be equal in food value to other sorts of beans. It is a little higher in fats, oils, and starches, and a little lower in crude fiber and protein than the common pink bean.

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See your nearest dealer about the Olds and ask for catalog No. 344.

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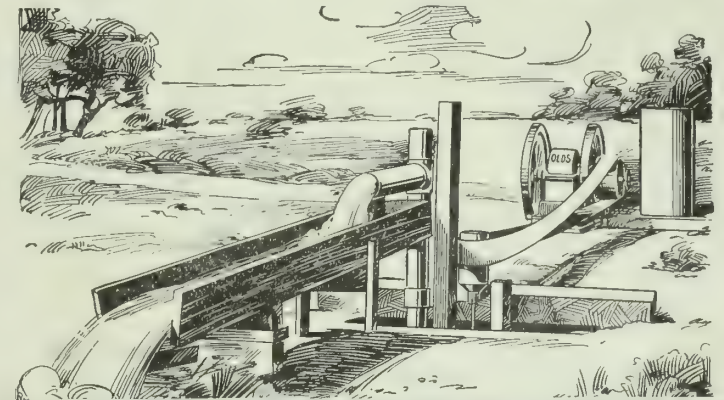
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AGRICULTURAL REVIEW.

Annual Tractor Demonstrations.

The tractor demonstration at West Sacramento last week was a success from many viewpoints. Attendance was lightest Thursday and heaviest on Friday, averaging for each of the three days probably between 800 and 1000 people.

Of course, the greatest benefit to the prospective users of such machines was the unusual opportunity to compare one make with another, to ask the makers "why" in regard to certain details, and "how" in others. The writer took occasion to ask several makers to defend certain points about their machines which seemed inferior to corresponding points on others. The answers they gave were in the main satisfactory, and brought out a number of ideas. It is only fair to give the man who seems to have a machine inferior to another a chance to tell and show its advantages. For the grower of farm products, it is better than a university course in tractors; it brings out the vital points in much less time, and much more forcibly.

Not the least of the advantages of such a meet is the interchange of ideas between those who have used tractors and know their failings and possibilities. W. H. Schrader, of our staff, overheard one farmer say to another:

"I use my tractor for nearly everything on my farm. I even hitch my mower on behind it."

The other one was unabashed.

"Shucks, I've got you beat a mile. I've fitted a 10-foot sickle bar to the side of mine, and don't have to pull the mower."

Some ludicrous but not very significant troubles occurred, as when one machine got stuck in the mud and could not get out, even after unhooking from the plows. A rival machine helped the engine out and then ran back through about the same place and plowed it in the bargain. Another machine, while floundering helplessly in the mud, was subjected to the snapshot photographer of a rival concern. Getting into these predicaments was simply due to indiscretions of the drivers.

On the manufacturers' side, it was a great opportunity to sell machinery; and many orders were booked by the various salesmen. Perhaps still more business could have been done had enough demonstrators been available with each machine to answer the questions which were not asked for lack of possible attention.

Perhaps a few friendly criticisms would not be amiss. The tule field on which the demonstration was held was as practically uniform as possible for all classes of tractors; little ones competed under the same conditions as the giants, though they were not built for the same conditions and were therefore somewhat at a disadvantage.

Possibly demonstrations could be arranged where conditions would obtain for which each machine is designed. Cultivation, hauling, plowing, harvesting, ditching, stump-pulling, pumping, silage cutting, and all the operations to which a tractor might be put in orchards and on hillsides, sand and adobe, roots, sod, and stubble—these things and conditions might be demonstrated to the advantage of both the farmer and the manufacturer.

It might be well to hold such a demonstration away from any big city in order to attract only prospective buyers, men who want to know because they will use the machines if convinced that they will be better or more economical. Elimination of the merely curious, who are in the way of interested inquirers, would be the object of holding such a demonstration at some small railroad point.

The educational and profitable results of such exhibitions make it seem to us very desirable that they be made annual occurrences or oftener.

Horticultural Prizes.

Instead of apple varieties competing with each other at the State Fair, three cash prizes with ribbons will this year be given for the best of each of ten varieties put up in commercial packages. A list of varieties taken from Professor Wickson's "California Fruits" is being sent to growers for suggestions and revision. About 60 prizes will be awarded—peaches in the same way—and over 200 will be given in the horticultural department all told, including plate exhibits, etc. This will put all localities on equal prize-winning terms, whereas before, with prizes for the best varieties, some sections stood no chance.

Deciduous Notes.

Apricots were shipped from Vaca valley last week.

H. A. Bassford, of Vaca valley, has been hand-thinning most of his varieties of shipping plums, with a force of 35 men, having about finished this week, with Wicksons, Formosas and Santa Rosas, which often thin themselves as late as this when an inch in the short diameter. All fruits are being left thicker because there is plenty of moisture in the soil. The following varieties had to be thinned this year: Beauty, Climax, California Blue, Burbank, Wickson, Formosa,

Santa Rosa, and Kelsey. This is partly because the ranch is sheltered from north winds by a range of hills. Peach thinning will come later.

Cherries in Sonoma county are reported by Horticultural Commissioner A. R. Galloway as 25 to 50%, the late varieties being heavier. In Vaca valley the early cherries are all off. They were a very light crop, but the late varieties seem much heavier. Cherry gummosis is bad in some orchards, and has attacked some in Sonoma county, but more damage has been done to old trees by what seems to have been dry weather of the past years.

Enos Gopfert, of Vaca valley, sold his French prunes at 6¼ cents basis

May 7th. All of his Imperial prunes went at 12½c for all sizes. Another grower was offered 12½c for Imperials larger than 30s and 7c basis for those under 30. He has 70 acres of this variety and a good crop.

Dried-fruit prices for the 1914 crop are still rising in Fresno county.

Driscoll Brothers, of Alameda county, are shipping a carload of Banner strawberries per day to northern points.

The first cherries from San Jose to Eastern markets this season were shipped early this week. This is eight or ten days earlier than usual.

A large part of the southern California walnuts are contracted for. The California Walnut Growers' Associa-

Little Giant POTATO DIGGER

A real little giant—designed to avoid the heavy cost and repair of potato diggers which amounts to a large proportion of the original cost each digging season.

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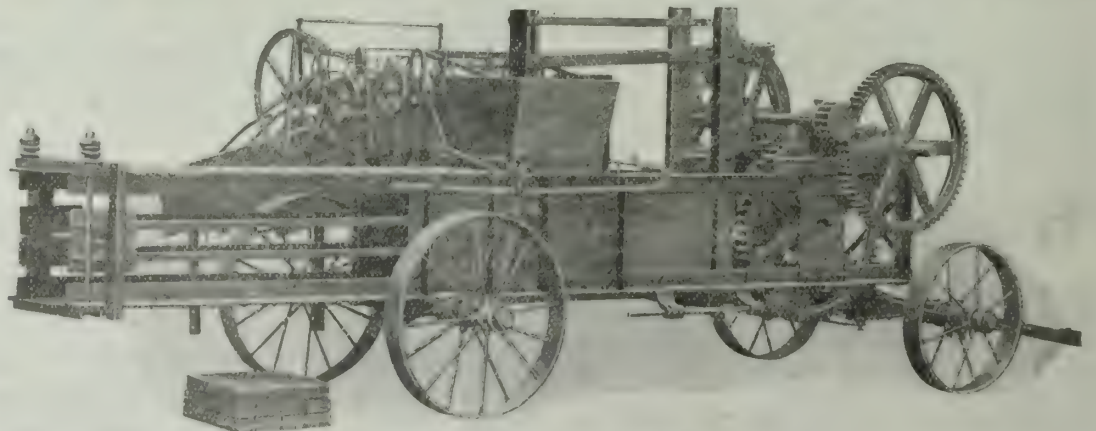
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tion, a co-operation of 16 locals, has undertaken to sell direct to the wholesalers rather than through private selling agents as heretofore.

Apples exported to Sweden are designated "California," "Oregon," and "American" apples. Only the red varieties are desired, and the best size is 175 per box.

The dried-fruit packing plant at Hanford is to have a three-story addition, 60 by 120 feet.

Pacific Coast Nurserymen.

Excursion rates to the twelfth annual meeting of the Pacific Coast Association of Nurserymen at Vancouver, B. C., June 16 to 18, are as follows: Fare and one-third on the certificate plan on all railroads. Pacific Coast Steamship Co. from San Francisco, \$41 to \$44, and from Los Angeles \$59.50 to \$62.50, with six months limit and including meals and berth while on shipboard.

Citrus Notes.

Santa Cruz county is planting a considerable acreage of lemons.

The thousand acres of citrus fruits in Santa Barbara county might be increased to 20,000 acres, according to an agricultural survey about completed by the California Development Board.

Agricultural Notes.

Orange and San Diego county sugar beets give promise of a great crop with high sugar content. The acreage is less than last year. The heavy rainfall made irrigation unnecessary.

Cantaloupe acreage in the Turlock district was very largely increased this year, and the crop is good. Ten to fifteen cars per day are estimated to be the output for some time this season.

Express and freight shipments of cantaloupes have already gone from Imperial valley. W. S. Fawcett, who has 800 acres, expects to ship over 450 carloads this year.

El Centro is to have a Fruit and Vegetable Exhibition, June 3, to show the variety that may be grown there. Cash prizes will be paid on apricots, 1 dozen; apricots, 1 crate; peaches, 1 dozen; grapes, 5 lbs.; plums, 1 doz.; figs, 1 doz.; pears, 1 doz.; almonds, 1 doz.; olives, 2 doz.; oranges, 1 doz.; grapefruit, 1 doz.; lemons, 1 doz.; can-

taloupes, 1 crate; watermelons, 1 melon; Irish potatoes, 10 lbs.; sweet potatoes, 10 lbs.; turnips, 5 lbs.; onions, 15 lbs.; tomatoes, 15 lbs.; cucumbers, 10 lbs.; artichokes, 5 lbs.; beets, 5 lbs.; cauliflower, 5 lbs.; cabbage, 5 lbs.; eggplant, 5 lbs.; sweet corn, 15 lbs.; squash, 5 lbs.; berries, any kind; flowers, any kind. The fact that these products will be ready for exhibition on June 3 speaks well for the earliness and fertility of the valley.

Water is so plentiful in Yolo county this year that a number of ventures are being made in rice. Among them is the field of 70 acres planted on the dairy ranch of A. W. Morris & Sons near Woodland.

In the Richvale district of Butte county, 25,000 acres are in rice this year. "Caterpillars" were used in preparing the land.

"Three weeks in the spring I could profitably use 20 horses on my ranch; the rest of the year, two horses do the work. I want a cheap, small tractor on this account," said a dairyman who called at our office this week.

Farm Bureau Organized.

Yolo county has been busy the past week completing the organization of the Farm Bureau which was started last Farmers' Picnic day to direct the activities of the farm adviser. The county is divided into units territorially, and the units are organized with at least 10 members each who pay \$1 per year membership fees. Each unit elects a director of the County Farm Bureau, and these directors meet once a month to lay out the work and the travels of the adviser and his assistant till the next meeting. The county horticultural commissioner, G. H. Hecke, was recently appointed farm adviser to serve without pay, directing the activity of Assistant Farm Adviser N. P. Searles. Their big work now is to crystallize the growing sentiment in favor of cow testing associations. Broderick unit organized Friday, Woodland Saturday, Esparto Monday, Winters Tuesday, and Guinda Wednesday.

In a shipment of 4000 day-old chicks made recently from Sonoma county to Fallon, Nevada, it is reported that only 6 died. Fallon people imported about 20,000 chicks last April.

Dried Blackberries.

[Written for the PACIFIC RURAL PRESS.]

What to do with blackberries which are too ripe to ship or can be satisfactorily settled in the Sonoma county berry district by drying. Eight or nine years ago they were dried in large quantities; more recently the price has been too low, but last year 15,000 lbs. were sun-dried on the ranches in trays somewhat like prunes. Mammoths dry away about 6 to 1, Lawtons 5 to 1, but return almost to their original size and flavor on being soaked over night in cold water. Mrs. Newburg, of Sebastopol, made a pie from them, in March of this year, which tasted almost as good as the fresh berry pie.

After thorough drying, most of the berries are processed on the ranch of Mrs. Barlow. Berry juice is obtained by stewing ripe ones or by using canned juice. This is mixed with sugar and the berries are dipped and then dried in an evaporator. They would be welcomed in that condition by school children for lunches, and even older folks, such as the manager of the Berry Growers, find them delicious between meals.

For market they are packed in boxes holding 10, 25, and 50 pounds each. Many dried loganberries are sent to Alaska where their tartness is specially agreeable. A carload of the 1914 crop has been sold already to Guggenheimer & Co. of San Francisco, by Manager I. N. Cable of the Sebastopol Berry Growers, and he expects to sell two carloads more this season. Minneapolis, Chicago, and Oklahoma City like the dried berries, and with the considerably increased crop expected this season it will probably be very profitable to supply them.

CURING OLIVES AT HOME.

[Written for the PACIFIC RURAL PRESS.]

Soaking, preserving, and retailing 500 gallons of ripe Mission olives, paid F. F. Rodgers, of Newcastle, last year no less than 70 cents per gallon, while a great many sold at 25 cents per quart. They were sold from a light wagon in bulk, with no expense for jars or bottles.

On being picked, they were soaked three or four days in a solution of two tablespoonfuls of lye, one of salt, and one of lemon juice per gallon of water. At this time the solution is changed for a salt brine, in which the ripe olives stay about a week, the brine being changed twice a day for four or five days and then once a day. By this time they are properly cured, if the meat is free from the stone. The brine is then washed out with running water five or six days, and a fresh light brine keeps them till sold.

THE WAY TO BURN A STUMP.

To the Editor: In British Columbia, some 40 years ago, we used to burn out the big pine and spruce stumps, some of them 6 feet across, by boring two holes in the stumps with a long-shanked (3-ft.) 2-inch auger. Bore one hole as close to the ground as the auger will permit and as far as the center of the stump, and another hole straight down from top of stump to meet the lower one. By dropping some pieces of red-hot charcoal to the bottom of the hole, the draft will cause it to start, if the stump is dry, and the stump will

burn out and also the roots. If stump is not very dry, bore top hole first, pour a cupful of coal-oil down it, and in a day or two bore the bottom hole and start the fire. I have burned green spruce stumps this way by nursing the fire until it got well started. After they once get a good start they will burn without further attention. A. C. A. might try this method.

San Jose.

SAM'L HAIGH.

PRUNE PRUNING AND PRUNE BEARING.

To the Editor: The explanation of the failure of the prune crop given by Mr. Coates in his letter to the PRESS of April 25th, will hardly apply to this part of the State. Prune trees in the upper part of Napa county were in full bloom when the hot wave of March 15 struck them. We had several days of north wind and abnormal temperature; the mercury reaching 98° in the shade and the ground well filled with moisture. Under such stimulating conditions the fruit developed very rapidly and gave promise of an enormous yield. But of course in the nature of things the growth was tender and unable to withstand an extreme change of temperature. Then came the freeze; the mercury dropping to 28°. This was too much for the little prune that had started under hot house conditions and we think this is the cause of our crop failure.

Close by are small orchards that have been heavily pruned; one of them, two years ago, was cut back like a Santa Clara county apricot orchard and has a fine growth of new wood but no prunes.

We believe in "pruning the prune" and from what little experience we have had think it pays in the quality of fruit produced and it is quite possible that young vigorous wood will hold its fruit better under adverse weather conditions than old, enervated branches. But nevertheless there are but few prunes around here, neither on new or old wood, and we are of the opinion that "Jack did it."

Calistoga.

F. P. PATRICK.

DOG WITH ST. VITUS DANCE.

To the Editor: Please tell me, through your paper, what is wrong with my shepherd dog. He is a year old and had distemper this spring. He seems to be all right except his front legs and neck. His head keeps jerking, and when he lies down it is just the same. He does not seem to rest at all, but he eats well and is playful as before. He seems to be all right except the front parts. He has worms and I gave him some worm medicine.—Mrs. J. L. M., McFarland.

Your dog has (chorea) St. Vitus dance. He will outgrow this in a few years. This is secondary to distemper.

Mallein shows the presence of glanders in infected horses, but neither it nor glanders vaccine are dependable to immunize healthy ones or to cure diseased ones. Experiments of the Department of Agriculture prove that vaccination does not immunize horses, and it is recommended that the practice be dropped. Eradication of the disease still depends entirely on eradication of infected animals and disinfection of premises where diseased animals have been.

SURFACE IRRIGATION PIPE

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GILROY CAL.

Constructive Agriculture—No. 19.

NEEDS OF CO-OPERATIVE STRENGTH.

[Written for the PACIFIC RURAL PRESS by D. N. MORGAN, University Experiment Station.]

Thinking people are all aware of our present day conditions. They do not have to look far to note the effect of the high price of land, of the high rate of interest, of the middleman and the lack of competition so far as the farmer himself is concerned. We Americans have permitted these conditions to unconsciously creep upon us, probably on account of the wonderful natural wealth of America and its limitless area. Since these conditions are here, it is necessary for his own preservation that the farmer get the highest price possible for the product which he sells, and full value for all money expended. It is a well known fact that over half of the consumer's price for farm produce goes to the middleman. City people welcome the importation of Australian mutton for the price per pound is several cents less than home grown mutton. Our sheep raisers should rise and assert themselves for it is a fact that the Australian farmer receives a greater cash price for his sheep than does his California brother. Our method of handling and marketing products is too expensive. When one considers that but 46% of the consumer's price eventually reaches the producer, the question naturally arises: 'Are our present day middlemen necessary? With practically no capital invested and with no risk, it seems that their net earnings are entirely too high. I have a friend in the commission business who told me that all the money he had invested was in his office furniture and supplies, and that last year he made a net profit of \$30,000. His success is due to his wonderful ability for organization. If this man could be in the employ of the producers and return a percentage of these large earnings pro rata to the producer and consumer the commonwealth would be the better for it. Why cannot the consumers so organize that they may eliminate these wasteful methods of handling? If they did so, both producer and the consumer would be better off. Since farmers are specialists, especially in California, they are large consumers as well as producers, hence the system would work both ways.

WHAT CO-OPERATION HAS DONE IN DENMARK.—It is said that the time is not ripe for co-operation in California. It may be so. It was the case in Denmark and Ireland that until the people were reduced to dire poverty they did not arise and assert themselves. Denmark today is one of the most prosperous countries in Europe and Ireland is increasing in prosperity as she grows in the co-operative spirit. The ultimate goal of all agricultural interests is to make rural communities better places to live.

Denmark, a small country in northern Europe, but one-seventh the size of California, was formerly made up of sand dunes, the soil naturally poor in fertility. After the Napoleonic wars the people were reduced to wretched poverty while today in proportion to population, they are the wealthiest country in Europe. They export over \$90,000,000 worth of butter, eggs and meat yearly. In 1910 they had \$208,000,000 in their savings

banks. Eighty-nine per cent of all Danish families own farms and homes. The land in Denmark is easily acquired. There is no tenancy. Consider these figures for a moment and imagine the area south of the Tehachapi or the area in California north of the northernmost limits of the Sacramento valley, and imagine these areas producing the amount of money that Denmark produces from the sale of similar diversified farm products.

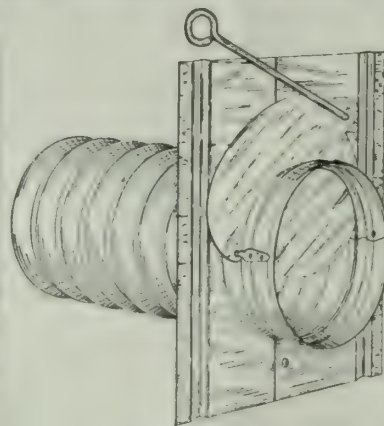
There is a reason for these prosperous conditions in Denmark today. They were not able to go ahead and gain prosperity without running into all sorts of difficulties, but where they had the advantage over the Californian is that their ruler was able to recognize the conditions and saw in co-operation vast benefits to his subjects. He could see that tenancy was not conducive to the best citizenship and so authorized legislation which would provide for the acquisition of land on long time loans. Laws were passed which permit a peasant to pay one-tenth down and get the balance from the government, to be repaid at the rate of 4% per annum. This 4% covers the interest charge and also creates a sinking fund, so that eventually the peasant becomes an owner. The result is that today there are 240,000 farms in Denmark. They average 40 acres each. Some of these farms are as small as 1½ acres while the larger ones run up to 150 acres. Some of the first benefits that were noted from the co-operative move were the increased educational facilities that were provided, both general and technical, and that community interests became uppermost in the peoples' mind. The prohibiting of absentee ownership and making it necessary for all owners to occupy their land has been of the greatest benefit to Denmark. From their small area there are today 30,000 students studying in their 29 agricultural schools and their one main University of Copenhagen. These students are studying not only the science of production but also systems of distribution. This is many times the enrollment of the agricultural students in California, while our area is seven times as great as Denmark. Of course we must recognize the fact that our area that is cultivated in tracts of less than 1000 acres is but ¼ the area now cultivated in Denmark. Also that our total population is but little over 2,000,000 people.

CO-OPERATION IN DAIRYING.—Since Denmark is preeminently a dairy country, it is natural that their first efforts along the line of co-operation should be with co-operative creameries. Their first creamery that was operated along these lines was started in 1882. In California we have found that co-operative creameries are the most apt to succeed of any co-operative endeavor, probably because farmers have a product which they must dispose of daily and the manufactured product always has a ready market. The dairyman also understands that it will not be feasible to keep this butter in storage. They therefore have a daily income and it does not require a great deal of capital to finance.

In California co-operative creameries have started in regions where considerable dissatisfaction exists due to the

treatment given the dairymen by the creameries occupying the territory. Farmers have a natural hesitancy to

go into any new organization or society about which they are not sure, and they seldom wish to put up cash, but



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V. C. Tires reduce skid danger and wheel slipping on muddy roads. The vacuum cup knobs bite down deep and are a constant safeguard. In town, on slippery pavements, V. C. Tires are guaranteed not to skid.

Guaranteed oilproof—oil on roads, on the garage floor or dripping from bearings can have no deteriorating effect.

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it has been possible in certain sections of California to get these farmers to sign notes, and these notes read "We or either of us promise to pay, etc." Enterprising bankers have been willing to accept these notes and to lend money to the farmers to build their creamery. These same notes also serve as a lever upon the farmers to keep them from selling their cream to the competing creameries, who, in certain sections of California, have been guilty of manipulating the prices, weights, and tests in such a way as to discourage certain farmers from disposing of their products to the Co-operative Creamery. It should be apparent to the thinking dairyman that this manipulation is only a subterfuge and as soon as the co-operative creamery is removed from the territory that other methods will be practiced as it will be necessary for the creamery man to make up for his temporary losses.

Since pork is a natural by-product of the creameries, it is natural that as soon as the Danes saw their creameries were succeeding from the results of co-operation, they organized bacon-curing societies, and the first society of this nature was organized in 1885. In 1910 there were 34 factories and they exported \$1,500,000 worth of bacon. It took a somewhat longer time for the co-operative egg export societies to organize, but in 1895 their first society was formed. It has resulted in the standardizing of the products which has resulted in a greater stability of prices and a constant market. In 1908, \$6,600,000 worth of eggs were exported from Denmark.

WHY CO-OPERATION HAS SUCCEEDED.—The influence of the agricultural colleges in Denmark has resulted in the organizing of cow testing associations. The result of these cow testing associations here, as has been wherever they have been put into practice, has been that the production of the dairies has been increased. Since the co-operative production societies were so successful it occurred to the Danish farmers that it would be well if they could so organize that they could purchase at wholesale rates. The result of this endeavor has been an increasing business for the past few years. In 1908, \$17,500,000 worth of produce was handled by them. One of the secrets of their success is that they have educated their men and have not been afraid to pay high salaries to their best trained leaders. When the California farmer is willing to pay a salary commensurate with a man's ability, or a salary that his competitors would be willing to pay, then and then only will his co-operative societies be able to compete successfully with the companies that have been in the business for years.

LESSONS FROM IRELAND.—How often have we noted that co-operative societies have been organized and have been doomed to failure, and in nearly every case we can trace this failure to incompetency in the leader. A successful farmer will not care to quit his farm and assume the management of a new co-operative organization but will be willing to turn it over to one of his neighbors who has found it unprofitable to farm, has not been able to succeed in that line but thinks that he might make a success of running a store or a co-operative association for his brother farmers. Inability to farm frequently means inability to succeed in other lines. Ireland had her experience with incompetent men when she endeavored to regain her

lost supremacy as the leading dairy region of the world. It was the Danes who went into their markets, competed with them, and killed them. The government in control of Ireland did not see that it was a national disadvantage to permit grafting creamery operators to monopolize this section. The leaders did not see that it would be to their advantage to assist all co-operative movements. They refused to pass the necessary legislation and would not assist in permitting the farmers to organize themselves, but allowed them to be harassed by the country store keepers, the independent creameries, professional politicians and religious teachers. The people in Ireland, not being sufficiently educated, did not know that the townsmen's methods of organizing a co-operative society would not succeed when used with farmers. The most able of the inhabitants of Ireland revolted at these conditions and emigration set in at an alarming pace. However, there were some patriotic citizens who were willing to labor against the handicap. Fifty meetings were held before the first co-operative creamery was successfully launched. In five years but thirty-three were organized. In April, 1894, the Irish Agricultural Organization Society was formed, for the purpose of seeking governmental aid. They could see that better educational facilities were necessary and that better land tenure laws would have to be obtained before Ireland could prosper. In 1896 Parliament recognized these conditions and established a department of agriculture and technical instruction for Ireland. They also investigated the land tenure conditions in Ireland. They discovered that the rents were so high that it was impossible for a man to be able to any more than pay the rent. The rates were all that the traffic would bear. Ireland contains 20,000,000 acres of tillable land, has a population of four and a half million farmers and one-half million people not living on farms. Various plans were suggested for relieving this condition. One was that the government should fix an arbitrary, maximum rental for each particular tract. This might have proved satisfactory had it not been that it was a physical impossibility to adequately describe the tract. The second plan was that the government should buy out the landlords. The Land Purchase Act was finally passed which provided that absentee owners must sell to farmers for a price, 3½% of which would make a lower amount in interest than the rental charge. The government makes an advance to the landlord where above interest from the tenant is 10 to 40% less than rent, and the state loans money at 2¾% interest and ½% additional for sinking fund. In 68½ years an estate is thus paid for. With this encouragement from the government, for the five years ending 1908, there were \$385,000,000 sales made to owners; 6,000,000 acres have been transferred in the last decade. At this rate, by 1920, most of Ireland will be owned by resident farmers. Emigration from Ireland has stopped, comparatively speaking. The people are engaged in dairying, poultry and general farming and have organized a wholesale purchasing society. They are also operating their own insurance companies, and as the co-operative spirit develops they are succeeding.

A PLAN FOR CALIFORNIA.—From these two European countries we can learn

several lessons. One is that educated citizenship is required; second, that independent land ownership is necessary and that land must be purchased at a price that does not necessitate unbearable interest.

We Americans are in a position similar to the apparently blind British lords when we permit a sub-division company to sell land at a value three times what it is worth and do it on the ground that they only require a small payment. After having made this small payment, it is found necessary to pay in interest on the deferred payments more than the land will produce. It would be better for us not to invest in land at all. The State must come to our assistance by limiting the price that can be put on land. We also need State aid to second the efforts of voluntary organization, once that their worth is proved. We must also be willing to recognize the worth of broad minded, unselfish, inspiring men and be willing to pay them what is necessary for their leadership. The financial resources of the State should be open to the co-operator and the legislatures should render them assistance in making the needed laws. Co-operation will come when the faith of the farmers in their neighbors is strengthened and the

government has done its part.

[This is an exceedingly interesting review of foreign accomplishments and therefore should be carefully considered by all readers. Some of the suggestions for local application seem to us to involve more paternalism than Americans are likely to stand for but this too merits careful consideration. —EDITOR.]

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15% stronger than second growth Hickory. Better and cheaper than any other hardwood. Makes most beautiful veneer for paneling.

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Fruit Seed. Write for prices.

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Red Crown is in no sense a new grade or manufacture of gasoline. It is the same product which automobilists have known and relied on for years as "Standard Oil Gas." We have always called it Red Crown and now we wish you to know it by that name.

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With the Live Stock Men.

Judging by the prompt manner in which members of the California Live Stock Breeders' Association are sending in their dues for the coming year, there is little fear but what that Association will soon be put on its feet, financially. D. O. Lively, who is acting as secretary until such time as a paid secretary can be secured, states that he has already received about \$300 in dues and that every mail brings some reply to the letters he has sent out.

In a communication to this office, R. L. Waltz, of Hanford, writes that in justice to C. G. McFarland, of Tulare, we should make a correction of our report of the Hillier Jersey sale, as it was Mr. McFarland who purchased the bull Gertie's Son.

James McAllister, of Chino, writes that he is about to leave for a trip through Wisconsin, and possibly New York state, where he intends to purchase Holstein-Friesian cattle from the best herds in the East. He further says that he expects to offer for sale Holsteins of more superior quality than has ever been offered in this State before, and will also put a price on every animal in his present herd.

County Livestock Inspector Griffith, of Kings county, states in his monthly report that he found three cases of glanders in the county during the

month and a few scattering cases of hog cholera. Otherwise there was no serious trouble found.

The first shipment of wool to be sent through the Panama canal left Stockton last week. The shipment consisted of 1000 sacks.

Reports from Stanislaus county say that State Dairy Inspector C. A. Starkweather is making rigid examination of the dairies in that county, with the result that many dairymen have been ordered to clean up.

The De Pue Warehouse Co. purchased last week 27 sacks of wool at Corning, for which it paid from 18 to 20c per pound. This company has shipped seven carloads of wool from this place this year, and has three cars more to ship.

The Churchill dairy, at Fallon, Nevada, has recently closed a deal for a carload of registered Jerseys which were purchased at Modesto, California. Preparations are also being made by this firm to furnish certified milk to its customers.

The agitation for a cow-testing association which has been under way in Yolo county for some time, seems to have been productive of results, as reports from Woodland state that such an association will be organized at an early date.

A company known as the Gilroy Cheese Co. is erecting a large cheese factory, near Gilroy, which will handle milk from other dairies as well as its own. Along this line, we learn that a cheese factory has just been completed at Dairyville, Tehama county, which will have a capacity of 800 pounds daily, all of which has been contracted for by a Sacramento house.

What is being interpreted as a move on the part of the Southern Pacific railroad to stock its own lands in Shasta, Trinity, and Siskiyou counties, is the recent announcement that 1429 head of cattle are now on their way from Nogales, Arizona, consigned to Redding. The reason for this conjecture is that during the past spring the company has raised the prices of grazing permits to a point thought prohibitive by cattlemen, who have therefore been compelled to vacate.

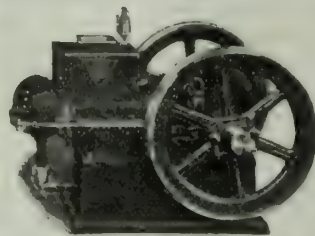
The twenty-ninth annual meeting of the Holstein-Friesian Association of America will be held at the Sherman House, Chicago, Ill., on June 2 and 3, for the election of officers and other business which may come before the Association. Preparations are being made to have a reduced rate in force on all of the railroads, and in order to accomplish this all breeders expecting to attend should notify F. L. Houghton, Brattleboro, Vermont, at an early date.

A report from Carson City, Nevada, is to the effect that an effort will be made by the State of Nevada to have on exhibition at the Panama-Pacific Exposition at least one carload of prime yearling, two-year-old and three-year-old grade beef steers, for which that State is famous.

The receipts of cattle at the Portland Union Stock Yards for the past

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NO BATTERIES NO COILS NO TROUBLES

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Alpha Engines can be furnished with special carburetor for using low grade distillate or tops.

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We manufacture a large part of our dairy supplies. That is one reason why we save you money. Below is a partial list of supplies—check the items of interest, and write us for prices and literature.

Milk Coolers. Milk Bottle Fillers.
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THINK OF IT!

125 Head of Registered Holstein Cattle to be Sold at Bidder's Prices on JUNE 16, 1914, at GEO. A. SMITH'S First Sale of Registered Holsteins.

Cows with Official Records. Cows now on a Year's Semi-Official Test making good records. They are bred to do what they are doing and are doing what they are bred to do.

Bred Heifers and Cows—Splendid individuals with quality and finish. Bred to sires with a national reputation such as Judge Hengerveld De Kol, considered the best son of the World famous Hengerveld De Kol, 116 officially tested daughters; Prince Lunde Korndyke and Sir Mabel Pontiac Korndyke, both sons of that king of sires, Pontiac Korndyke, 91 officially tested daughters, grandsire of K. P. Pontiac Lass, World's Champion, 44.18 lbs. butter in 7 days; Prince Segis Korndyke Jr., son of a 30-lb. daughter of Pietertje Hengerveld's Count De Kol, 98 officially tested daughters, and by Prince Segis Korndyke, 30 A. R. O. daughters; Prince Beauty Pietertje Segis, a son of Belle Segis, the World's Record daughter of King Segis, 82 officially tested daughters; Finnerne Sarcastic Pontiac, from an A. R. O. daughter of Burke Hengerveld B. Wayne, 12 tested daughters, and by a son of De Kol 2nd's Mutual Paul, 39 A. R. O. daughters—and other splendid well bred sires.

The nicest lot of Yearling Heifers you will ever have a chance to select from. They are backed by a perfect network of Milk and Butter records. They are most excellent individuals. They fill the eye and when matured will fill the pail. They are sure to make big records. They carry the blood that has produced World's Champions.

Heifer Calves—They must be seen to be appreciated. Their pedigrees are full of high records. I should keep all heifer calves like there, but as my entire offering is strictly high class, I include them in this sale.

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Hillcrest Stock Farm

THORNTON S. GLIDE, Prop., DAVIS, CAL.

Breeder of

Short-Horn Cattle,
Shropshire and
Merino Sheep



"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

Offers for Season of 1914 an exceptionally fine lot of Pure-bred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

week were heavy, good cows and heif. There was a liberal supply of hogs finding a ready sale at steady for the week, one load topping the prices. Prime grain-fed steers brought market at \$8.60, but the market closed \$8 to \$8.25 and hay-fed \$7.50 to \$7.75. around \$8.50 to \$8.55 for best light

selected swine. Grass sheep are beginning to show up in good numbers, prices ranging as follows: grass wethers, \$5.25 to \$5.50; ewes, \$4.25 to \$4.50; and spring lambs, \$7 to \$7.25.

A shipment of 125 head of yearling heifers was received last week at Oakdale, Stanislaus county, and placed on the Frankenheimer ranch. This bunch came from Humboldt county and will be held for sale later.

A shipment of 300 head of sheep was received last week in Sutter county, which is said to be the first of a total flock of 10,000 head to be brought from Utah, and which will be pastured on various ranches in Yuba and Sutter counties.

The following prizes will be awarded to Holstein-Friesian exhibitors at the 1914 State Fair, by the Holstein-Friesian Association: 15% cash will be added to each cash prize in class 43, sections 495 to 500 inclusive, and 504 to 510 inclusive, and 514 to 518 in-

clusive. Sections 643, 644 and 645, five-day butter-fat production, silver cup to each prize-winner, if a registered Holstein-Friesian, but no contestant shall receive more than two cups. This offer is based on the classification as it appears in the premium list for 1913.

Charles Odell, breeder of Jersey cattle and Poland-China swine, at Modesto, writes that since inserting his advertisement in this journal he has about sold out his surplus stock, but will have some youngsters ready for delivery soon.

VETERINARY QUERIES.

[Answered by Dr. E. J. CREEELY, San Francisco Veterinary College.]

WOLF TEETH AND BLOOD DISEASE.

To the Editor: Will you please tell me what dog or wolf teeth are in horses? Do they affect a horse's nervous system and should they be extracted if they do not interfere with chewing?

I have a young work horse which seems to be affected with an itching skin disease. Lumps appear on his sides, up and down his front legs, on his shoulders (but not under his collar), and on his belly. These lumps, most of which are about the size of my thumb-nail, scab off and finally disappear, to be replaced by others. His symptoms are much more pronounced in hot than in cold weather. Melted axle grease seems to abate the itching. I have tried unsuccessfully to treat him with lard and sulphur externally, also sheep dip. Thinking that perhaps alfalfa hay did not agree with him, I fed him exclusively on oat hay, but it did not seem to improve him greatly. Can you tell me what is the matter with him and how to cure him?—C. L. S., Clovis.

Wolf teeth are harmless except that they are usually small and situated in such a position that the bit wears against them, causing the sensitive tissue to become exposed, causing the horse to throw up the head from pain when the cold bit strikes the worn tooth. It was believed by the ancients that wolf teeth would cause blindness. This was erroneous. Your second question pertains to a blood disease and can be treated by giving Fowler's Solution of Arsenic, one ounce daily. Apply neutral oil, 1 pint, and milk of sulphur, 1 ounce. Mix, shake well, and apply once daily after washing.

POOR MILK AND FREE-MARTINS.

To the Editor: Two years ago I paid \$125 for a three-year-old fresh Jersey. She made 40 lbs. milk and over 1 lb. butter daily for 3 months, and kept up a good milk flow until drying up time. I rested her 6 weeks and she freshened with twin heifers, March, 1913, and then for 5 months gave 42 lbs. milk. October, 1913, she was making 1½ lbs. butter daily. I rested her 6 weeks before she freshened a month ago. She gave 48 lbs. milk daily and is now giving 42, but whereas she has always been a rich milker, there is very little cream now. As a butter cow she is not worth keeping. Can you tell me if she is likely to remain like this, or whether her milk will return to its original richness? I feed all the alfalfa she will eat, morning and night, and at noon a good feed of bran and barley scalded. Sometimes I give evergreen dairy

DE LAVAL

as superior to other separators as other separators are to gravity creaming

THE above heading sums up the cream separator case, as it concerns every prospective buyer of a separator and every user of an inferior separator, in as few words as it could well be put.

OTHER separators skim cleaner than is possible on the average with gravity creaming, and De Laval Cream Separators skim as much closer still than other separators, particularly under the harder conditions of cool milk, running heavy cream or separating the milk of stripper cows.

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It troubled for over a year, but seemed in no way to affect her health and is now about healed up. After it was cut open a large round soft growth

(Continued on Page 582.)

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New Classes at State Fair.

[Written for the PACIFIC RURAL PRESS.]

Before his death April 16, at Sacramento, J. L. McCarthy, formerly secretary of the State Fair Association, had recommended to the State Agricultural Society a number of changes in this year's premium list which will be of interest at this time to breeders who contemplate showing live stock at the coming fair.

A number of changes have been suggested in the horse division, namely, the elimination of the Coach horse classes as there was not enough interest shown in that class and few if any entries. To the classes of grade mares and gelding has been added a class of grade foals as well, with the idea of encouraging the farmer to raise better grade horses. Extra premiums will also be given in the horse classes for get of sire, in an effort to bring out more young horses.

A new class will be four horse teams of draft horses in harness, the leaders to weigh 1600 pounds or over

and the wheelers 1800 or over. Prizes of \$50 for the winner and \$25 for the second best will be offered for this class, to be judged 50% on the horses, 25% on equipment, 15% on education and 10 points on handling. The same prizes and conditions will be given for teams two hundred pounds smaller than the above as well as prizes for mule teams that are California bred and raised. It is planned to hold these tests as near as possible under working conditions that the educational features will not be lost sight of.

In the cattle divisions a change has been made in the Shorthorn classes, in that cows three years or over must show a suckling calf at their side. Heretofore it was necessary that they be in milk only, the new ruling having been suggested by the American Shorthorn Association.

In the get of sire of all cattle classes as well as in the butter fat contest for dairy cows, it will not be necessary for exhibitors to enter the animals name a month before as has been the custom, but rather he will be compelled to state on his entry blank how many head he is entering for competition. This, it is thought, will enable the breeders a better opportunity of filling their classes as before an animal often became incapacitated during the last month of fitting.

Every effort is being made to co-operate with the breeders in regard to shipping facilities and the superintendent is now working on a plan which it is hoped will allow of more rapid loading when shipping out is under way. The superintendent is also anxious to receive suggestions from the breeders as to any betterments that might be made in the housing conditions.

It should be interesting to know that the Agricultural Society has decided to allow any exhibitor at the Panama Pacific Exposition in 1915, the use of stable room at the State Fair grounds, free of charge during the time previous to the competition. This will allow breeders from outside of the State an opportunity of acclimating their show animals, a thing which will be very necessary for those from climates much different from ours. The same course is being urged upon the directors of the various county fair associations. It is estimated that there will be room at the State Fair grounds for 30 herds of 20 animals each.

SANITATION OF LABOR CAMPS.

The Commission of Immigration and Housing of California, which has its office at 525 Market street, San Francisco, announces the fact that it proposes to secure proper sanitation of labor camps and issues a circular giving definite information about the requirements it will insist upon. It is therefore desirable that all who contemplate establishment of camps for laborers should apply for this circular and see exactly what they have to do to comply with the requirements of

the law. The Commission has seven inspectors in the field. Over fifty camps have been inspected. Twenty-seven of these camps, containing over 5000 men, have already been brought up to the required standards. The others are being rapidly reconstructed and improved. Two inspectors are working, with the co-operation of the owners, on the hop ranches of the Sacramento valley, and these ranches will have model camps this summer. This work directly affects over 100,000 laborers in the State and indirectly it protects the health and welfare of all the inhabitants of the State.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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BREEDERS AND IMPORTERS OF
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Outlook For American Beef.

In his address before the thirty-eighth annual meeting of the Texas Cattle Raisers, Ike T. Pryor fortified the position we have taken in this journal concerning the chance for American beef in free competition with the world product, in this interesting way:

CATTLE IN PRODUCING COUNTRIES.—The countries in which we are most concerned as beef producers, which can, and no doubt will, develop strong competition with us in the live stock producing line, are Canada, Mexico, Argentina, Australia, Brazil, and New Zealand. There are many other countries in Central and South America, but these named and in the order given are, in my opinion, the greatest cattle producers in the world (save and except, possibly, the United States), and the inhabitants of these countries are turning their attention and energies to the production of live stock. Canada, with its 7,000,000 population, has 7,000,000 cattle, and its possibilities as a cattle-producing country are not to be ignored. Mexico, with a population of 15,000,000 people and 5,000,000 cattle, will be one of the greatest cattle-producing countries in the world, if given an opportunity to develop this industry. Argentina, whose population is estimated to be 7,000,000, has 29,000,000 cattle, more than four head per capita. Australia, with 4,000,000 people, has about 12,000,000 cattle. Brazil, with an estimated population of 20,000,000 people, has approximately 30,000,000 cattle. New Zealand, with a population of a little over 1,000,000, has 2,000,000 cattle.

I believe I am safe in asserting all of these countries, as well as the United States, are capable of producing two or three times as many cattle, and am sure this is true of the United States.

By summing up the cattle in the six countries I have just mentioned and adding 56,000,000 for the United States, including dairy cattle, we have a grand total of 141,000,000, and I do not believe I am extravagant in my estimate when I say it is possible and highly probable this number of cattle will be doubled within the next six to eight years, making a total of 282,000,000 head in the seven countries named, including the United States. In addition to this, four of the named countries, including the United States, have about 250,000,000 sheep as good as the best in the world.

High prices of cattle and beef stimulate and increase production on the one hand and curtail and reduce consumption on the other, thus both working toward the one inevitable end—greater production and lower prices. As proof of the fact that high prices will eventually increase instead of diminish the supply of cattle in the country, I give you results of my investigation from five of the principal markets. Receipts of calves at the five principal markets were 20% less in 1913 than in 1912, due probably to growers holding back their heifer calves. Shippers and speculators bought 28% more calves in 1913 than in 1912, due, probably, to the strong demand for heifer calves on the farm and range. Packers bought 24% less calves in 1913 than in 1912, due probably to growers holding back their heifer calves. Packers bought 2% less grown cattle in 1913 than in 1912, due

probably to cattle growers holding back their cows.

RECENT RECEIPTS AT MARKET CENTERS.—The combined receipts at the seven principal markets in the United States in the year 1900 were about 1,179,344 head. This number was increased each year to 1910, when 9,265,408 head were received. Each year since 1910 less cattle have been received at these same markets.

As to receipts of calves in 1900, these same markets received 304,310 head and this number increased each year to 1910, when 981,309 head were received. As in other cattle, the receipts of calves have been less each year since, until 1913, when 740,662 were received.

To my mind, these statistics prove the stock farmer and ranch owner are holding back their breeding stock for future use, and this is incontrovertible when I tell you the government statistics show cattle made a slight increase in 1913 over 1912, and this, coupled with the fact that in 1900 53% of all beef breed of cattle in the United States were females and in 1910 they had gained on steers until 65% were female, and by 1914 I am safe in estimating 70% of all the beef breed of cattle in the United States are females.

DAIRY CATTLE.—In order that you may not become confused as to the kind of cattle I have reference to in this address, I will give you briefly the number of the dairy breed of cattle in the United States since 1850. In that year, according to the government reports, we had 6,385,094 head of cattle. Each year from 1850 to 1914 this breed of cattle has made a steady and substantial increase in numbers until today we have 20,737,000 dairy cattle in the United States, none of which I have taken into consideration except in one instance where I credit the United States with 56,000,000 head. However, I believe this breed will have to be reckoned with in the future in our beef supply. The time has passed when a little dairy calf is knocked in the head as soon as born.

WORLD-WIDE SHORTAGE.—All the best authorities on this subject agree there is a world-wide shortage of cattle. There has been an actual decrease in the world's meat products, especially of beef, in the last decade. But my knowledge and faith in the possibilities of the United States as a cattle-producing country lead me to believe this country will be the first to recover among those nations capable of producing a surplus, and that within the next ten years we will have overcome the great shortage and be able to supply our home consumption, at the same time be in position to enjoy a profitable export trade.

There is great danger, however, of foreign countries increasing their beef products very materially, and importing into this country a supply that may discourage our live stock producers and farmers to the extent that they will not produce the quantity of beef they would if the tariff had not been removed.

You will observe I express some misgivings as to the ultimate benefit to be derived by this country from the abolition of the tariff on live stock. My idea is, if this government had retained a reasonable duty on live stock it would have encouraged the production to an extent we would in a few

years be exporting cattle and the products thereof. It is certainly more profitable for the people of any government to be in position to export their surplus than to be the dumping ground for the surplus of other countries, for the necessities of life. Briefly speaking, it would be more profitable for the people of the United States to help feed the world than for the people of the world to help feed the United States.

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VETERINARY QUERIES.

(Continued From Page 579)

came out and this was taken out, but grew again. We have had the growth cut away three times, the last time in September last. The skin has healed almost all over the place now and there is no growth or discharge. Please tell me if twin heifers will breed. A neighbor says not.—R. T. B. Lindsay.

I would recommend a complete change of food for this cow, giving occasional doses of salts. Twin heifers as a rule do not breed, being known as "free-martins"—they may breed, however.

TROUBLE WITH ILIAC ARTERY.

To the Editor: Can you tell me what to do for a colt one month old? It seems to have cramp. The least excitement will cause it to fall over, like it was shot. It stiffens all over, the legs stiffen when it falls—do not drop down, but fall out full length, just like its legs were sticks, and muscles are hard like a board all over. It will lay a few minutes when it will draw its legs up. It usually has to try a good many times before it can get up again. It will get part way up when cramps come on again and over it goes. It breathes hard by spells and kind of roars. It is rather stiff when it is up and walking around, and when it tries to run will get stiff in legs, the hind legs stand back, and it falls sometimes or may stand that way a few minutes then walk off. Would like to have you tell me what to do for it through the PRESS.—W. B. S., Grass Valley.

This is an embolism or plugging of the internal iliac artery. The colt will probably outgrow this. Adult horses never recover. I would confine the colt in a paddock where he cannot run about very much. No treatment is of avail.

HOG CHOLERA

To the Editor: We had two young pigs about four or five months old. One day they were all right, the next day, when we went to feed them their morning ration, one acted queerly, refusing to eat. Its hind quarters seemed to be paralyzed and at frequent intervals it would turn in a circle, and anything it ran into would stop it until the next attack. We gave it salts, thinking that would help him, but in a half hour it seemed to gag and try to vomit and frothing at the mouth and lying down, kicking and struggling until the end. Six hours after, the other went the same way. I buried the two of them, but perhaps should have burned them. What was the matter with them? Did they have cholera? My mother also has pigs, and in fear that this might be the cholera, I would like to know what could be done to prevent hers from getting it, although she lives a mile from where we are.—F. W., Harrison.

This is hog cholera. The State Veterinarian should be notified. Your mother's pigs will go the same way, as persons visiting from your place to the other will undoubtedly carry the disease. This method of spreading the disease has been clearly proven in many instances. I would recommend vaccination of all the hogs in the neighborhood. Stop visitors and isolate your animals, permitting no strange hogs in among your animals.

The Importance of Shade Trees in the Poultry Yards.

(Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.)

A great many people make the mistake of thinking that shade is unnecessary except where they have fancy stock. While the hot sun is injurious to feathers, it is much more so to the well being of the hens and growing chicks. A shade of some kind is absolutely necessary if the young chicks are to attain the full growth before maturing. Last year the summer was hot all over the United States and the hens did not recover from the effects of the summers heat for a long time, in fact the hot weather of last summer was a great factor in the short crop of eggs during the winter, so from a commercial point it certainly pays to furnish some form of shelter during the hot days. For the young chicks a few rows of sunflower seeds planted in the runs will be as good as anything. Along the side of a fence the castor bean will give nice shade, as it has quite large leaves and even plain pumpkin vines can be trained on a fence that is strong enough to bear the weight. This would not be the case with wire fences and on them I usually pin gunny sacks cut open.

But no matter what is used, either natural or artificial, so long as it serves the purpose and adds to the comfort of the hens, it is a profitable investment.

TELLING THE SEX.—In some breeds it is quite difficult to tell the sex of the young stock until they are well advanced. When they are to be sold as broilers it is better that they should be separated at about six weeks of age, if possible, but unless the sex can be distinguished this is hard to do. In all breeds the head of the male is a little broader than the female, the legs are a little thicker and the tail does not progress as fast as the females. But sometimes all outward signs fail, as pullets sometimes are built very much on the same plan up to three or four months old. When these signs fail, the expert uses his ears instead of his eyes and tells by the voice, which in the male is always stronger and coarser than the female. If in doubt just put in a few minutes listening to the various peep, peep, peep of the chicks and you will soon get so that you can determine a cockerel almost as quick as it is hatched.

GREEN FEED FOR GROWING CHICKS.—This is an old text that is ever new and seasonable, for no matter what else you feed, if you fail on the green feed the chicks are robbed of their birthright. It does not really matter so much what it is, that is by what name you call it; it can be grass, clover, alfalfa, lettuce, kale, cabbage, or even green corn, cut up in lengths to suit, but feed some form of green feed at least once a day and three times is better. If one form of cruelty is, or can be, worse than another, it strikes me that yarding fowls where they can see a nice patch of alfalfa or green grass and yet can't get to it and never get a feed from it, is the most cruel of all forms. We ought to think of these things when we yard fowls, but I am afraid many of us don't think except when it touches the pocket book.

Chicks must have bulky food to do

well and make growth, they must have the salts that make for health and growth in all animal life and if they are kept yarded, it is not only cruel to neglect this form of food but it is unprofitable to the owner. Anybody that can keep fowls can furnish green feed if they will go to a little trouble

POULTRY BREEDERS' DIRECTORY

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and it is poor policy not to do so.

The big poultry men know that green feed is not only necessary, but that the lack of it cuts down the profits so much that it is not worth staying in business. I am told that on the George ranch of 22 acres, 15 of it is in green feed and Mr. George is one of Petaluma's successful poultrymen. That statement alone should be a lesson to the small breeder who thinks he can get along with little or no green feed. On my little ranch I have 2500 kale plants growing besides some cabbage, beets and other garden truck that the chickens will get a good share of, some alfalfa too, and yet there will be times when there will be a scarcity for this southern land makes slow growth.

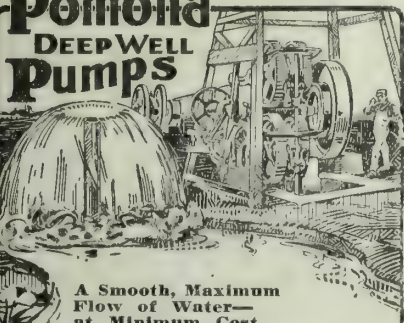
EXERCISE.—This is quite as important, in a way, as green feed, because neither chicks nor grown fowls do well unless they exercise. For small chicks, fine cut clover, alfalfa, or even

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straw makes good exercise. Throw the chick feed and bits of meat into the litter and it will serve two purposes, food and exercise. The thing to aim at is to have it light. Alfalfa alone, unless cut very fine, has a tendency to pack, and this discourages the chicks, but mixed with oat straw it is fine and the chicks will scratch for dear life in it.

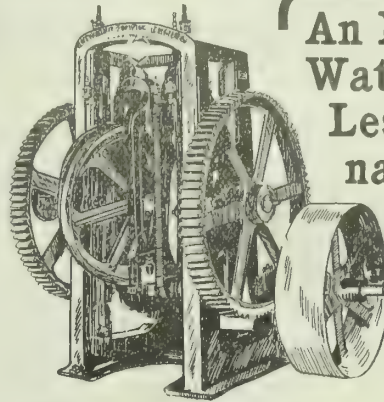
Clover is the best all around scratch material to be gotten and for those who have a lawn of clover and blue grass it is a very easy matter to cure it, when the lawn is cut, and store the clippings in sacks, until needed for chick litter. It is these little things that do not appear to amount to much of themselves that make up the sum total of chick raising versus chick killing.

WATER.—Is it necessary to speak about water you say, perhaps not, certainly not to the bulk of chicken raisers, but there may be some who have paid attention to a theorist, that has been writing in some of the Womens magazines who says "chickens do not need much water." And she is quoted as an authority. Not much water, well I never ask them what they need, the question I ask, "is the water vessel empty?" if so I make haste to fill it. But that applies not to little chicks alone but to all sizes and ages. For small chicks I set the kettle on the fire to boil while I eat breakfast and that warms sufficient water for all my young chicks under two months. Now I don't pretend to say that this warm water, early in a morning, is absolutely necessary for chicks, but it does not take but a little fuel to heat the kettle and a minute to put it on and I have an idea that a warm drink is just as acceptable to a chick as a warm cup of tea is to myself. Anyway it makes me feel better than if I drank a cup of cold water and it is quite a sure thing to me that the warm drink aids digestion, if I eat any breakfast, and if this is so in my case, why won't it work with a chick whose hold on life is so slim that it takes but a small thing to send it across the border? Anyway my chicks never drink cold water first thing in a morning, after that it is another matter.

QUESTIONS AND ANSWERS.

To Mrs. Swaysgood—Will you kindly give me a good formula to feed broilers for market?—J. M. F.

Answer—Only a short time ago I gave several feeding formulas, among them one for broilers and this would reach the Press about the time our reader sent his letter. However, in case he did not see it I will give another. If you can get sour milk or buttermilk, mix all your mash feed with it, as the broilers will fatten



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quicker and be a much better color. If you have cheap potatoes cook them, then mash, adding corn meal or ground oats and shorts with a little salt. Potatoes make a cheap fattening diet but need thorough cooking. Mix one part ground oats with one part fine shorts or low grade flour and one part bran. Mix the whole with sour milk or buttermilk and feed what they will eat up while fresh. In feeding all milk mixtures this rule must be followed, because if the food lies around and gets sour, the chickens will not eat it or if they do it will cause bowel trouble. The second week leave out the bran and feed just ground wheat or oats and flour, the third week add a tablespoonful of tallow to the mash for every bird fed, this is as long as they can be crowded with this fattening diet so don't commence feeding this until your broilers have reached the required size.

To Mrs. Swaysgood—I am raising chicks hatched in an incubator, have

been feeding Sperry chick feed and boiled eggs. They are two weeks old and seem strong, but for the past few days they have been dying. They become droopy and die very quickly. Can you tell me the cause and what to do for them?—Subscriber.

Answer—First cut out the eggs, it is strange that people will stuff little chicks with such concentrated food and expect them to live. Chop up a head of lettuce and an onion or two, just as fine as you can, so they will eat it and mix with a little bran and rolled oats. Feed them this two or three times a day and the chick food the balance. Your chicks are dying for lack of something to eat. Eggs are not natural food for little chicks and while they can be fed to good advantage, mixed with other things too much egg constipates the little fellows and does more harm than good. Give chicks grit, ground oyster shell and charcoal and get them interested in green feed, then they will soon quit dying.

The Home Circle.

Hanging Baskets.

Hanging baskets are made of wire-work, earthenware, or wood and have a piece of wire or a small chain attached for suspending them. Regardless of the material used, there should be holes in the bottom for drainage.

In preparing the basket, especially one made of wire, a layer of moss one inch deep should be spread over the bottom and sides of the basket to hold the soil and prevent water from washing through. Ordinary potting soil consisting of one-half garden loam, one-fourth rotted manure and one-fourth sand is used to fill the baskets.

For the centre of the basket, rather low, compact growing plants are preferable. Such as geraniums, coleus, dracaenas, ferns, alternantheras, and sweet alysum. Around the edge of the basket are placed plants of a drooping or trailing habit to hang over the sides. Lobelias, creeping myrtle, and Wandering Jew, are among those which may be used. Other plants which appeal to the grower's taste may be substituted.

To water the basket it may be dipped in a tub or basin until thoroughly soaked or it may be sprinkled with a watering pot in the usual way. If a layer of moss is placed over the surface between the plants, less water will be required and the basket will present a neater appearance. In dry weather the basket will need to be well watered every day.

In order to have the plants bloom freely, the basket should be hung where it will be exposed to the sun for two or three hours each day.—R. A. McGINTY.

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2. Has she gone to the country school?
3. Does she like country life?
4. Is she genuinely interested in boys and girls?
5. Does she usually stay in the country Saturdays and Sundays?
6. Does she feel the responsibility of her position?
7. In her arithmetic classes, does she make use of the problems of the country?
8. Does she in reading and grammar bring to the children from the riches of the literature of the out-of-doors?
9. Does she know the elementary facts of agriculture and home economics, and does she want to know more?
10. Does she realize that the country school offers great opportunities for the right teacher? And would she like to lead her boys and girls into the land of promise?

If you can say "yes" in answer to all of these questions concerning your teacher, I say, God bless her. Raise her salary, and keep her another year. Don't let the city get her.—B. F. COEN.

Rhubarb Jam.

Select the rhubarb ripe, trim and wipe it with a cloth, then cut into inch long pieces and weigh the fruit. To each pound allow 14 ounces of preserving sugar and the thinly cut rind of half a lemon, shredded finely. Put the fruit, sugar and lemon rind in a basin and let it stand over night. Next morning put the contents of the basin in a preserving pan and allow it to boil, remove the scum, and boil fast for about an hour. Test its consistency by pouring a little of it in a saucer or plate; if it sets it is ready to be put into jam pots, while the preserve is still hot; if not set enough reduce a little longer. Cover the pots with parchment papers or better still with paraffine. Keep the jam in a cool but dry place.

A teaspoonful of ground ginger added to each two pounds of fruit improves the flavor of the jam.

Rhubarb Turnovers.—Mix half a cupful of chopped nuts and one and a half cupfuls of seeded chopped dates and raisins mixed together, and two cupfuls of thick, stewed rhubarb. Cut out rounds of pastry, put the fruit mixture in the middle, fold securely, and then put into the oven and bake.

Subtraction.

The teacher was hearing the youthful class in mathematics.

"No," she said, "in order to subtract, things have to be in the same denomination. For instance, we couldn't take three pears from four peaches, nor eight horses from ten cats. Do you understand?"

There was assent from the majority of pupils. One little boy in the rear raised a timid hand.

"Well, Bobby, what is it?" asked the teacher.

"Please, teacher," said Bobby, "couldn't you take three quarts of milk from two cows?"—New York Evening Post.

A certain cricket club set up a gymnasium for the use of its members

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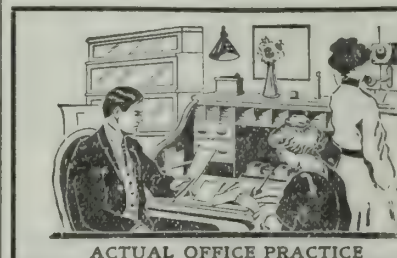


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during the winter, and engaged an instructor to teach jiu-jutsu. Recently one of the cricketers appeared with a bandaged head, and, when questioned, said a boy had inflicted the injury. "What!" exclaimed the instructor in jiu-jutsu. "You mean to say you let a mere boy knock you about like that? Why didn't you try jiu-jutsu?"

"I couldn't." "Nonsense! There's no conceivable situation to which jiu-jutsu cannot be successfully applied. How did it happen?" "He dropped a brick on my head from a third-floor window," answered the member.—Titbits.

Praise of Eloquence.—An Alabama

negro was defended in court by Senator Morgan. Having cleared the ne-

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gro of the charge, the senator said to him, "Rastus, did you really steal the mule?"

"Well, Marse Morgan, it was just like this," said Rastus. "I really thought that I did steal dat mule, but after what you said to the jury I know I didn't."—The Presbyterian of the South.

Henry was required to write a sentence containing the plural of bamboo. The smiles of the class attracted the attention of the teacher to the board, upon which he found this sentence: "Two bamboose are in a cage."—Youth's Companion.

Our Young Folks

Grandma's S'prise.

By FRANCES HARMER.

Benny and Kitty were brother and sister. All their lives—Benny was nine, and Kitty six—they had lived in a city. Now they had come to the country for the first time, to stay with Grandma.

"Come and wave good-bye," said Grandma, as Daddy and Mother climbed into the automobile.

They waved good-bye, but when the automobile had turned the corner, and they couldn't see Daddy standing up to wave, nor Mother fluttering her handkerchief, they felt queer.

"You're crying," said Benny. "I think my eyes are getting washed," explained Kitty, hastily, "and so are yours!"

Benny rubbed his eyes very hard. Grandma looked at them, and said,— "It's about bedtime, dears."

When they were safely in bed, and had said their prayers to Grandma, the queer feeling came back. They remembered that Daddy and Mother were far away. Their eyes had to be washed again! Then Grandma smiled at them.

"Oh, I forgot," she said. "I've the finest surprise for you tomorrow."

Benny lifted his head from the pillow, and looked across at Kitty's cot. "What is it, Grandma?" he cried eagerly.

"Please tell," added Kitty, sitting up. "No, you must wait till the morning, and see it," said Grandma. "It has four things where the wheels of an automobile would be,—but it isn't an automobile."

"What can it be?" puzzled Benny.

"I do want to know," murmured Kitty. But she lay back, sleepily.

"It has two things where the lamps of the automobile are," went on Grandma, putting Benny gently down, "and a thing that makes a noise,—but it isn't a bell."

"It—must—be—funny." Kitty's voice trailed off into silence.

"I—hope—morning 'll—soon—come," yawned Benny. Then he, too, went to sleep and knew nothing more until the morning sun awakened them. Hurrying through their dressing, they ran into the hall, eagerly inquiring where the surprise was.

"This way," and Grandma led them out into the yard.

They saw a beautiful big cherry-tree, and a little ladder was leaning against it.

"It's lovely. But it hasn't four things, and two, and a noise," said Benny.

"No, it hasn't," agreed Kitty. Then Grandma called,—

"Trixie! Trixie! O Trixie!"

There came running to them the dearest little fox terrier you ever saw. It had tan spots on its tail, and on one ear; and it jumped, and frisked, and barked, and wanted to make friends right away!

When they had played together a little, Grandma said,—

"But what has Trixie, where the wheels of the automobile are?"

"Legs," cried Kitty.

"And its eyes are instead of lamps," said Benny; "and it makes a noise with its mouth."

"With its tongue," corrected Kitty.

Grandma smiled.

"You've guessed my riddle," she said. "Now, you may gather cherries for a pie for dinner, and Trixie may play with you."

Assistant Farmers.

"Onions, turnips, beets, tomatoes, peas, celery,—my! I guess I'll have as grown-up a garden as grandfather's is!" exclaimed Willie, happily, as he named over the different seeds he was going to plant, so soon as he got his "corner lot" ready for the beds.

Suddenly he stopped digging, and began striking his hoe vigorously into the soft soil.

"What's the matter, Willie?" called grandfather from the onion-bed. "What have you found?"

"One, two, ten, twenty,—why, hundreds of them, grandfather! And they'll eat every seed I plant!" exclaimed Willie, excitedly, as he began to cut the soil with his hoe more vigorously than ever.

"Hundreds of what?" And grandfather raised himself slowly from his knees.

"Worms, grandfather; and I'll not have a single thing come up!"

The little fellow's face looked a very picture of despair as visions of early vegetables—a surprise for father—that he had planned to take back to his city home suddenly disappeared.

"Why I never call them worms." "But they are worms,—angle-worms, grandfather."

"Yes, but I never call them so," laughed grandfather at the serious little face. "I call them farmers,—my assistant farmers; and, the more work I have for them, the better I like it." "Farmers! Worms, farmers,—and work? Why, grandfather, all they do is squirm and wiggle."

"Certainly, that's their work. Don't you see they angle their way through the soil, and so make it light and loose? They are regular little ploughs,—fertilizing the soil, too, as they plough, so to speak."

"But—but, grandfather, don't they eat the seeds while they're resting?"

"No, indeed: my little assistants don't destroy. They only aid in my crop-raising."

"I—I didn't know I was going to have some hired help this summer, when you gave me my little garden," laughed Willie.

"You're not going to," chuckled grandfather, as he returned to his onion-bed. "They work for nothing!" —A. F. Caldwell, in Sunbeam.

A mother entered the nursery, where her offspring were both screaming at the top of their lungs, and exclaimed, "Why, children, what are you crying for?" "I wanna dink!" demanded small Bobby. "Well, I'll get you a drink," replied the mother. "Elsie, what are you crying for?" "You didn't seem to hear Bobby, mam-

ma," said Elsie. "So I was helping him cry."—Youth's Companion.

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THE MARKETS.

San Francisco, May 13, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Spot wheat has been in fairly large supply, but the market continues in pretty fair shape as to prices, being a little firmer now than it was a few days ago. Inquiries are more frequent and the outlook seems to be for an increase in activity.

California Club, ctl....	\$1.62½ @ 1.65
Forty-fold	1.65 @ 1.70
Northern Club	1.62½ @ 1.65
Northern Bluestem	1.75 @ 1.77½
Northern Red	1.62½ @ 1.70

BARLEY.

There has been considerable speculative activity in the market for future barley this week, but the spot situation shows no change. Transactions continue of about the same volume as for the past few weeks. Receipts were a little lighter.

Brewing and Shipping. Nominal	
Choice Feed, per ctl....	\$1.00 @ 1.05
Common Feed	Nominal

OATS.

Oats appear, if anything, to be duller than usual this week. Prices on red feed are down 10c, and white oats are also a trifle lower with not much doing.

Red Feed	\$1.20 @ 1.30
Gray	Nominal
White	1.30 @ 1.32½
Black Seed	Nominal

RYE.

Though there is practically nothing doing in the rye market, the old prices are pretty well maintained when a suggestion of business is made.

Rye, per ctl.....	\$1.45 @ 1.50
-------------------	---------------

CORN.

The corn market is reported dull, with hardly enough movement locally to fix prices.

California Yellow	Nominal
Eastern Yellow	\$1.77½ @ 1.82½
Eastern White	Nominal
Egyptian	1.85 @ 1.90
Milo Maize	1.80 @ 1.85

BEANS.

Under a continued good demand, the bean market is firmer than ever this week, and prices are up in several items. The check in the advance movement noted last week seems to have been overcome and the upward movement continues. This week it was the turn of bayos and Mexican reds, with blackeyes making a still further rise. Blackeyes have now reached a top price of \$3, being a full dollar higher than the nearest competitor. Receipts continue fairly large for this season of the year.

(On wharf.)

Bayos, per ctl.....	\$6.50 @ 7.00
Blackeyes	7.75 @ 8.00
Cranberry Beans	4.50 @ 5.00
Horse Beans	2.15 @ 2.25
Small Whites	5.25 @ 5.80
Large Whites	3.90 @ 4.25
Limas	6.75 @ 7.00
Pea	4.25 @ 4.50
Pink	3.90 @ 4.35
Red Kidneys	Nominal
Mexican Red	6.25 @ 6.50

SEEDS.

Local seedmen report practically no movement in any line during the present week. The old prices are still quoted without any further inquiry or any great pressure to sell.

Alfalfa	12½ @ 15 c
Brown Mustard, per lb....	3½ c
Canary	7 @ 7½ c
Hemp	2½ @ 3 c
Millet	2½ @ 2½ c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

The demand for flour continues about as heretofore, and no change in either price or demand is anticipated.

Cal. Family Extras....	\$5.80 @ 6.20
Bakers' Extras	4.80 @ 5.40
Superfine	3.90 @ 4.20

Hay and Feedstuffs.

HAY.

Hay receipts continue very light—lighter this week even than last. The demand, however, has been still lighter, and prices are quite generally marked down. Local holders of old crop hay are trying to dispose of their holdings, and in some cases considerable cuts in price have been made to effect sales. The harvesting of new-crop hay is now under way, though none has yet reached this market. From the inquiries so far made regarding the new crop, it appears that the prices asked by the growers are considerably above present ruling prices here, and the marketing of the new hay promises to be a slow process. Some of the first cutting of the new alfalfa is seeking a market, but none is yet moving here.

No. 1 Wheat, or Wheat and Oats	\$11.50 @ 13.00
do No. 2	10.00 @ 11.00
Lower grades	8.50 @ 9.50
Tame Oats	9.00 @ 13.00
Wild Oats	8.00 @ 10.00
Alfalfa	8.00 @ 10.50
Stock Hay	6.50 @ 8.50
Straw, per bale.....	65 @ 95c

FEEDSTUFFS.

The feed market is not very active, but the tone seems on the whole a little firmer than it was last week. There have been no further downward movements in prices, which remain as last quoted. Rolled oats continue firm, and the weakness in rolled barley seems to have been entirely overcome.

Alfalfa Meal, per ton....	\$18.00 @ 19.00
Bran, per ton	24.50 @ 25.50
Oilcake Meal	34.00 @ 35.00
Cocoanut Cake or Meal..	26.00 @ 27.00
Cracked Corn	41.00 @ 42.00
Middlings	32.00 @ 34.00
Rolled Barley	22.00 @ 22.50
Rolled Oats	28.00 @ 29.00
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

The new feature in the market this week was the arrival of the first shipment of green corn; but, as this consisted of only three dozen ears from the Imperial valley and was not followed up by further receipts, it is not quoted. The small arrival brought \$1.50. The price changes this week are not very noteworthy. Mexican tomatoes are scarce and high. The arrivals of asparagus are limited and the quality has been good, with the result that the price has advanced some and the market is very firm.

Cabbage, per ctl.....	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.....	8 @ 17½ c
Carrots, per sack.....	35 @ 50c
Green Peas, sack.....	2.50 @ 4.00
Tomatoes, Mexican, box..	2.50 @ 2.75
Beans: Wax	5 @ 8c
String	5 @ 9c
Sprouts, lb.	4 @ 6c
Rhubarb, box	50c @ 1.25
Lettuce, crate	50 @ 75c
Mushrooms, hothouse, lb.	25 @ 30c
Asparagus, box	1.25 @ 2.25
Cucumbers, box	1.00 @ 1.75
Eggplant, lb.	10 @ 15c

POTATOES AND ONIONS.

Potatoes from the delta region are in plentiful supply and the range of prices is considerably lower. Other potato lines show no change. Some new crop onions are on the market, selling at prices ranging from 40 to 60 cents per pound. Desirable garlic is practically out of the market. The grade now offered is quoted at from 10 to 15 cents. The arrivals of potatoes and onions have been only moderate, though a larger movement is expected shortly.

Potatoes:	
River Whites	40 @ 60c
Garnets, lb.	2½ c
New Potatoes, lb.....	1½ @ 2½ c
Oregon Burbanks	75c @ \$1.00
Sweet Potatoes, per ctl....	2.50
Onions: Australian	\$4.00 @ 4.25
Bermuda, crate	2.00 @ 2.50
New Crop, box	40 @ 60c
Garlic, new, per lb.....	10 @ 15c

Dairy Produce.

POULTRY.

The poultry men report rather an

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inactive market, with no very great activity in the demand. Nevertheless, the easing off of last week has been overcome, and there has been an advance in a number of important items. Broilers and fryers have made a sharp advance, and young roosters are up one cent.

Large Broilers	26 @ 30 c
Small Broilers, per lb....	26 @ 30 c
Fryers, per lb.....	26 @ 30 c
Hens, extra, per lb.....	19 @ 20 c
Hens, large, per lb.....	19 @ 20 c
Small Hens, per lb.....	18 @ 19 c
Young Roosters, per lb..	24 @ 27 c
Squabs, per doz.....	\$2.50 @ 3.00
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @ 21 c
do dressed, choice....	23 @ 25 c

BUTTER.

The market has been unusually steady all week, with an extreme fluctuation of only a cent in extras for the entire week, and with even less change in the other grades. At present extras are quoted a half cent lower and other grades identically the same as a week ago. Arrivals are moderate.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23½	24½	23½	23½	24	24
Prime	23	23½	23	23	23	23
Firsts	23	23	23	23	23	23

EGGS.

Fairly heavy arrivals both from local producing sections and from outside points have failed to depress the market, which has not only continued firm but has scored an advance in extras and in selected pullets.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23	23½	23	23	23½	23½
Firsts	22	22	22	22	22	22
Selected						
Pullets.....	21	22	20½	20	21	21½

CHEESE.

The quotation on fancy California flats is up one-half cent in the San Francisco market and down a half cent in the Los Angeles market, thus bringing both together this week at 13½ cents. Transactions have not been large, but on a satisfactory basis.

Fancy California Flats, per lb... 13½ c
New Young Americas, fancy.... 15½ c
Monterey Cheese 12 @ 13 c |

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	24	24	24½	24	24	24
Eggs	23	23	23	23	23	23
Cal. cheese:						
Flats	14	14	13½	13½	13½	13½

Deciduous Fruit.

Cherries are now coming in freely and prices are dropping accordingly. In fact, the whole deciduous fruit list is weaker owing to more plentiful supplies of cherries and berries. Strawberries are of good quality and the market is in good shape, though generally lower in price, especially for the poorer sorts. Loganberries are now quoted at from \$9 to \$10 per chest. Currants are also in the market, the quotation being held at from \$1 to \$1.25 per drawer.

Loganberries, chest	\$9.00 @ 10.00
Raspberries, crate	1.25 @ 1.50
Strawberries:	
Malindas, chest	2.50 @ 4.00
Banner, chest	2.50 @ 4.00
Longworths, chest	4.00 @ 6.00
Apples: Newtown Pippins ..	1.00 @ 1.75
Oregon Spitzenbergs ..	1.40 @ 2.00

Cherries:	
Black Tartarian, box...	1.25 @ 1.35
White, box	75c @ 1.00
Black, box	1.00 @ 1.25
Loquats, box	1.00 @ 1.50
Currants, drawer	1.00 @ 1.25

Dried Fruits.

There is not so much talk of advance buying now as a few weeks ago, though a good deal of buying is going on all the time. The reports of short crops in a number of lines continue to come in. Present reports concerning the size of the prune yield are more favorable than those for some weeks, though there is no evidence of an easing off in prices on this account. The peach crop of the San Joaquin valley seems to be short, and offers of \$20 to \$25 for the early crop are reported. This is for canning, but it will have its effect on the dried fruit market undoubtedly. A report from Fresno says that 10 cents has been paid for new crop dried apricots in Kings county. The local market for spot dried fruits shows no change, and little or no interest is being taken. Concerning the situation the New York Journal of Commerce says: "Such advices as came from the coast with reference to prunes reflected a very strong feeling on the part of growers and packers with reference to prices on the 1914 crop. There were no offerings from packing quarters on a lower basis than 6¼c f.o.b. for the four sizes on assortments covering 40s to 60s, and in a number of cases 6¼c was demanded. For 60s to 90s a 6c f.o.b. four-size bulk basis was quoted as inside. On the spot the market was unsettled, as usual at this season of the year. With the natural slackening of consumption with the approach of warm weather and the cold storage season at hand, there appears to be a disposition on the part of some jobbers to shade prices in the hope of reducing stocks. According to some factors, however, most of the goods on which concessionary prices are made are of the kind that would not hold up well over the summer even under refrigeration. It is noted that of the larger holders of spot stock there is but one not disposed to meet cuts made by smaller competitors. There is little interest shown in offerings of future peaches or apricots by the local jobbing trade, but packers are not trying to force business and are holding firm to previous quotations. So far as can be learned, nothing in new crop apricots is offered at less than 11¼c f.o.b. base for three grades. On the spot the movement in these goods is slow, and prices are somewhat nominal. The Association still withholds offerings of future raisins, and independent packers seem to be less anxious to secure orders on the basis of their opening prices of 6¼c. for fancy and 6¼c. for choice seeded f.o.b. Coast owing to the unfavorable crop prospects."

Evap. Apples	Nominal
Apricots, 1914	9 @ 9½ c
Figs: White, 1914	3½ c
Black	Nominal
Calimyrna, 1914	4½ c
Prunes, 4-size basis, 1914..	6 c
Peaches, old and new....	4 @ 4½ c
Pears	Nominal
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	5 @ 5½ c
Seedless Sultanias	4¼ @ 4½ c

Citrus Fruits

Navel shipments from this State are rapidly cleaning up the crop. Several districts have already closed their

packing houses till the Valencia season opens. In some sections Valencias are now being shipped and the crop of this variety of oranges will probably exceed 10,000 carloads. Prices for navels has increased, especially on the larger sizes, so that those who have oranges now on the market are getting the best prices of the season.

On the New York auction last Monday, May 11, twenty-six cars of navels averaged from \$3.30 down to \$2.60 per box. Bloods brought \$3.05 to \$2.15; seedlings, \$2.90 to \$2.55; St. Michaels, \$3.30 per box. Other auction points were about the same as New York on that day.

Lemons are in good demand, prices being about \$3 in California, \$3.50 to \$4 in the Chicago market.

Shipments are still heavy, running over 125 cars daily. So far this season more than 23,500 cars of oranges and 1300 cars of lemons have been shipped from south of the Tehachapi.

With the larger arrivals of deciduous fruits in the San Francisco markets, there is less call for oranges, though the market continues firm. Lemons are in good demand, and are slightly higher for the top grade. Arrivals are only moderate, but sufficient for the demand.

Oranges: Navels, box.....\$1.00@ 2.50
Tangerines, crate..... 75c@ 1.25
Grapefruit, seedless, box. 1.50@ 2.50
Lemons, box..... 2.00@ 4.00
Limes, case..... 9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

Advices from the south this week are rather pessimistic as to the size of the walnut crop, though no reliable information is yet at hand as to what the actual size of the walnut yield will be. Locally there continues a fair jobbing demand, though the prices quoted are, as far as the growers are concerned, purely nominal.

Almonds:
Nonpareils..... 19 c
I X L..... 18½c
Ne Plus Ultra..... 17½c
Drakes..... 15½c
Languedoc..... 15¼c
Hardshells..... 7 c
Walnuts, new crop:
No. 1 Softshell..... 16 c
No. 1 Hardshell..... 15½c
Budded..... 19 c
No. 2..... 11½c

HONEY.

The honey market is still in a waiting situation, with the arrivals of new honey still in the future. No further reports as to the new yield are at hand this week. Old honey is moving very slowly.

Comb: White.....12 @13 c
Amber.....10 @11 c
Dark..... 9 c
Extracted: White..... 5 @ 6 c
Amber..... 4½ @ 5¼c
Off Grades..... 3 @ 4 c

BEESWAX.

Some beeswax is moving all the time, but the demand is steady with no great variation. Prices are unchanged.

Light.....30 @33 c
Dark..... 28 c

HOPS.

There is very little movement in 1913 hops, and no great quantity is left in the market. The main interest continues in the buying of the new crop, offerings for this being about as heretofore. The Portland market is reported weaker for 1914 hops.

1913 crop.....15 @17½c
1914 crop.....14 @15½c

Live Stock.

Slaughterers are reported as rather bearish in the matter of buying, but no changes are to be noted in prices. More sheep and cattle are being brought into California for fattening owing to the abundance of good range now to be had.

Steers: No. 1..... 7¼@ 7½c
No. 2..... 7 @ 7¼c
Cows and Heifers: No. 1.. 6¼@ 6½c
No. 2..... 5¾@ 6 c
Bulls and Stags..... 3½@ 5 c
(Grass-fed cattle, ¼@½c less.)
Calves: Light..... 8½@ 9 c
Medium..... 8 @ 8½c
Heavy..... 7 @ 8 c

Hogs: Grain-fed, heavy... 8 c
150 to 250 lbs..... 8¾@ 9 c
100 to 150 lbs..... 8½@ 8¾c
Prime Wethers..... 5½@ 5¾c
Ewes..... 4½@ 5 c
Milk Lambs..... 6 @ 7 c

DRESSED MEATS.

Steers.....12 @12½c
Heifers.....11½@12 c
Veal, large.....12 @13 c
Small.....14 @15 c
Mutton: Wethers.....11 @11½c
Ewes.....10 @10½c
Suckling Lambs.....13 @14 c
Dressed Hogs.....12½@13½c

WOOL.

The wool market is firm, and there is talk in some quarters of an advance, though this has not yet come. Most of the California wools are now cleaned up, though there is still some northern and Calaveras in the hands of the growers.

Spring Clips:

San Joaquin.....12@14c
Humboldt and Northern...15@20c
Calaveras.....14@18c

HIDES.

The feature of the month so far was the sale of the local take-off for May and June for local account. The actual price paid has not been made public, though said to be fully up to the price received for the April take-off some time ago. Prices are quoted as before.

Heavy Steers, over 56 lbs. 15 c
Medium.....14½@15 c
Light Steers, under 48 lb.14½@15 c
Heavy Cows, over 50 lb.14½@15 c
Light Cows, 30 to 50 lb.13½@14½c
Kip.....15½@16 c
Veal.....18 @19 c
Calf.....18 @19 c

Dry—

Dry Hides.....25½@26½c
Dry Kip, 10 to 15.....24½@25½c
Dry Veal, 5 to 10..... 29½c
Dry Calf, 7 down..... 29½c

Horse Hides—

Salt: Large..... \$3.00
Medium..... 2.50
Small..... 1.00

HORSES.

The reductions in quotations this week indicate to a certain extent the weakness of the market. The quotations for heavy drafters are largely nominal, for none of these are being brought in. The offerings at recent auctions have been of light stock, and these have been more than the market could stand at the old figures.

Heavy drafters, 1700 lbs. and over.....\$275@325
Light Drafters, 1500 to 1650 215@230
Chunks, 1350 to 1500..... 190@210
Wagon Horses, 1250 to 1350.. 150@200
Green Mountain Range..... 120@140
Delivery Horses, 1050 to 1250 100@125
Desirable Farm Mares..... 75@100

MULES.

1200 lbs.\$200@250
1100 lbs. 150@200
1000 lbs. 125@175
900 lbs. 75@125

PUBLISHER'S DEPARTMENT.

The number of new subscribers received by the RURAL PRESS during the past week was over 200, to be exact, was 226. These subscribers were secured without the use of premiums and are from the farmers living in the various parts of the State. This journal is now growing faster than at any time in its history, and we believe advertisers will secure better results from the use of its columns from now on, which ought to be mighty fine.

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FOR SALE—Portable pumping plant International 8 H.P. gas engine and 5-inch pump, mounted on wagon, necessary pipe; all practically new; cost \$600; price \$300. M. P. STEIN & CO. Stockton, Cal. Phone, 421.

4 H. P. DISTILLATE ENGINE, 2-in. centrifugal pump, iron frame saw mandrel, in good running order, \$75. N. M. LESTER, R 1, Gridley, Cal.

HAND-POWER CONCRETE MIXER and post form. All steel, \$25. N. M. LESTER, R. 1, Gridley, Cal.

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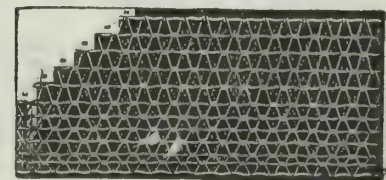
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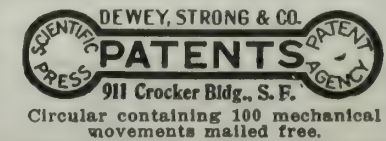
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THE PUBLISHERS,

Pacific Rural Press
420 Market Street San Francisco

THE PACIFIC RURAL PRESS

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SAN FRANCISCO, SATURDAY, MAY 23, 1914.

Fourth Year.

STIRRING ORCHARD SOIL.

[Written for the PACIFIC RURAL PRESS.]

It is a striking contrast to come out of a new fruit section of California into one long established. This is especially true of the cultural practices, if the one is irrigated and the other not; for irrigated orchards may be and often are cultivated less carefully.

In the great Sacramento valley are thousands of acres of new orchards, most of them not yet in full bearing. They are owned to a considerable extent by colonists from eastern states, where cultivation is not practiced so well as Californians have learned to be most profitable. Many acres are owned by non-residents who are unwilling to pay for proper cultivation, or who pay for it and do not get it.

The best general principle to follow in orchard cultivation is to plow deep; and then, as M. T. Sharpe of Vacaville says, "Cultivate all that you ought to and cultivate some more whenever you have an hour or two to spare, and keep it up all summer." Of late years in Vaca valley, cultivation has stopped about July because of the pressure of other work and the heat of the days. This year, a traveler may see there, and in many other parts of the State, grand old orchards butchered into fantastic shapes and full of holes where trees ought to be, but are not because last year they lacked moisture which might have been saved by longer continued cultivation then and in the dry year preceding.

There are few places where deep orchard plowing should not be practiced in connection with a heavy humus-forming cover crop. The top soil is deep in most of California's agricultural land. Deep plowing does not turn up an infertile subsoil. Air is needed by most of the soil bacteria, which are the agents in making plant food available. It is also necessary to the formation of the root-hairs by means of which only, the available plant food is absorbed for the trees' up-building. Air is supplied by plowing. Plowing cuts off last year's roots and acts like pruning of the tops. New feeders are pushed out in multiplied numbers, and this is most necessary because root hairs are found only for a short distance behind the tips of actively growing roots. Root hairs cork-over and lose their functions in a very short time, so it is absolutely necessary for the life of the tree that the root tips be continually pushing forward and developing new root hairs. This is possible to the greatest advantage in well tilled,

well aerated, well drained soils only. Then if the proper humus and plant food are there and no bad weather, pests, or diseases interfere, the tree must be healthy and bear fruit. In dry-farmed orchards, deep plowing is still more necessary because deep loose dirt forms a water reservoir; and because main roots should be forced deeper by providing a better chance to get plant food farther down, and by cutting those near the surface.

With irrigation, all the roots tend to stay near the surface where a moldboard plow cuts them off every season. Main roots should go deeper to anchor the tree against wind and to develop whatever root hairs the limited air will permit at depths where water will be available in case of failure of irrigation.

Many orchardists prefer to use disk, rather than moldboard, plows which often give the team a disagreeable jerk when plowing close to

trees and usually break a main root, a plow, or a harness. Guiding a moldboard plow next to the row is difficult too because the handles are in the way; tipping the plow one way runs it too deep, and tipping it the other way runs it out of the ground.

Some people plow toward the trees one year and away the next, leaving dead furrows between the rows or along the trees. Some plow twice each spring, once at right angles to the other, throwing the dirt from the tree at the first plowing, and toward it the next, which tends to put enough dirt around the base. Millard Sharpe plows once only, with a two-horse plow attachment which takes the dirt out from the rows,

at considerable strain on himself and also upon the plow, but at a saving of one plowing. To minimize dead furrows, he plows continually around one row until the next row is reached, then skips that and repeats the back furrowing on the alternate rows. This throws the dirt away from alternate rows, which are back furrowed the next year. He then hoes dirt back to cover any roots in sight. The system leaves the land less cut up, and allows plenty of room for turning.

A. D. Christian of Orland starts his plowing with two horses just far enough from the tree row to be convenient and uses one horse when close to the trees. L. F. Graham of San Jose plows next the trees with two horses and finishes the job with a tractor.

It is well to know the probability of rain or irrigation in deciding when in spring to plow. Most progressive farmers are using bur clover or other legume, or a grain as a winter cover crop, largely for humus. The longer it can be left in the spring, the more humus



Good Plowing in a Santa Clara Valley Prune Orchard.



Peach Orchard of D. B. Harris, Madera County, in Good Summer Form.

Good Plowing Followed by Fine Cultivation Make Plant Food Available and Save Moisture.

(Continued on Page 594.)

Pacific Rural Press

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 19, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.04	34.97	44.08	56	48
Red Bluff	T	32.88	24.21	86	54
Sacramento	.00	19.34	19.71	80	48
S. Francisco	.04	29.00	21.86	62	48
San Jose	.00	19.07	16.47	70	50
Fresno	.00	10.65	9.41	90	50
Independ'ce	.00	12.00	9.28	82	44
San L. Obispo	.02	30.96	20.04	68	50
Los Angeles	.00	23.55	15.45	68	52
San Diego	T	9.82	9.86	64	56

T means trace.

The Week.

Upon another page the reader will find the result of a very careful effort to outline the outlook for crops of different fruits in different sections of the State. Considerable changes have had to be made from the prospects indicated earlier in the season. More fruit has fallen from discernible causes, such as the fungus invasion of attachment tissue, than is usually experienced. There has also been disclosed more drop from defective pollination, for, owing perhaps to the coolness and moist air, more fruit clung to its perch without pollination than would have done so under normal conditions. Thus it appeared that the drenching of the bloom and the absence of the bees did not disclose their effects as quickly as usual. There will be a good supply of most fruits, for California does not forget her cunning in this line, but in view of the moderation of the bearing as a whole, and in view also of the barrenness of the markets of hold-overs, it is clear that values, which have sharply advanced of late, are fully justified. Fortunately growers are becoming each year better sellers and both by the efforts of their associations and of their chosen journals, they are coming each year into fuller possession of facts which underlie a proper selling attitude. Growers should appreciate this fact and strive constantly for the strengthening of their position by association and intelligence. It should be impossible to deceive them by such joyful proclamation as this, made by a Chicago fruit buyer as he breezily blew into a San Francisco hotel a few days ago: "There have never been more favorable climatic conditions and the fruit-growing acreage is bigger than ever before. It will be a big problem to market this great fruit crop in proper season. The railroads will have to meet demands greater than

any yet made on them, and a big sum of money will be paid for the fruit crop and for marketing it. It means prosperity for the Coast States. The entire Pacific Coast of the United States gives promise of producing the greatest fruit crop in the history of the country. All records are surely going to be smashed."

Beware of the bear when he sounds a joyful note. He who is deceived thereby is not wise.

Forcing Longevity on the Hen.

In his Seven Ages of Man, Mr. Shakespeare did a fair job in sketching the abjectness of senility. That he did not do it more profoundly is not his fault. He worked with the human species, in which there is no depth of decrepitude and dereliction like that of the superannuated hen. The question has often arisen in circles of higher criticism as to why Shakespeare paused upon the brink. The answer must always be that he could find no model from which to paint gallinaceous despair. The fact is that in any decently administered system of poultry husbandry there never is a superannuated hen. A rigidly enforced rotation in office must prevail, in the course of which mature hens are flown to the pot and pullets are pulled to the throne. And now, in spite of this wisdom of ages, what do we find among the frantic and misguided efforts of people to escape the high cost of living which they have brought upon themselves by their indolent, telephonic orders for automobile deliveries? We learn from Eastern telegrams that May 16 was observed as "rooster day" throughout the State of Kentucky, the purpose being to celebrate the fact that from that day onward Kentucky poultrymen have banded together and agreed to sell only roosters for food, instead of hens and chickens, so that the egg crop may thereby remain unimpaired through the slaughter of hens for food as heretofore. The idea of the Kentuckians seems to be that if you can keep the hen off the block she will lay on—like Macduff. It is possible, of course, judging by the photographs which the Kentucky distillers circulate, of centenarians who look like kids of forty, that a free use of whiskey may fix their hens so they will lay around forever, but we do not find any record of such a thing in the archives of poultry husbandry. Seriously, it is a silly enterprise, aiming to prevent poultry producers from doing what they think best with their own. It is "restraint of trade," which the anti-trust lawyers should take notice of. It is all of a piece with the anti-veal movement forced upon hotel stewards last summer. For a lot of people to solemnly come together and try to force a poultry grower to keep a lot of superannuated hens when they ought to be fed-up and eaten, is surely an indication that our lunatic asylums are still too thinly populated.

Making Prisoners Earn Their Keep.

A touching story is current that the governor of Kansas has paroled a State prisoner for sixty days so he can go to his home and harvest a wheat crop for the support of his family. He was convicted of selling mortgaged property last January and his family is destitute. The governor was informed that the wheat which the convict planted last fall promised to yield an abundant crop, and he decided the family needed the convict for the next sixty days more than the State of Kansas did. The decision is rational; merciful to the family and to the tax-

payers of the State, who otherwise would probably have to support the family and feed the idle convict besides. And if reasonable in this case, why not in many other cases of criminals of certain classes? Such a course is advised by experts in penology who have given all the considerations involved careful attention. It is being practiced, too, as far as under certain conditions seems feasible. Probably the knowledge of this specific Kansas instance may strengthen the hands of those who are trying to secure popular support for reforms in this direction.

First Aids to the Injured Wool Industry.

It is announced from Washington that the Secretary of Agriculture calls a general assembly, in Washington, the first week of January next, of all who desire to help "formulate plans for placing the sheep and wool industry on a more stable basis." It is stated that the subjects to be discussed will be: "The manufacturing value of American wools; improvement of farm and ranch methods of handling wools; possible adaptation of foreign methods of handling wool; standardization of the wool clip and prevention of damage by dogs and predatory animals"—including free-trade politicians, we hope. This is rather a brave act on the part of the present administration and we hope the wool interest will go to it widely. It devolves upon them to protect the meeting from being merely a demonstration by the faithful for political purposes. Unless they do this, the meeting may be merely a gathering of sheep farmers of the Eastern States whose interests bear about the same relation to the wool interests and capacity of the West that an Eastern wood-lot does to a Sierra forest. Of course the subjects set for the meeting, as quoted above, seem rather trivial, or at least subsidiary to the great question involved, viz.: the duty of the country to protect its wool industry and give it a chance to grow in the world, and not let the world roll over it, as it is now doing—but that aspect of the case is, naturally, taboo. Nevertheless, go to it ye of the West! Show the country that the flock industry of the country is something more than an old sheet-full of wool or a lamb's pelt on a barn door!

Fashions Going Back to the Farm.

We sometimes forget to read the fashion articles in the common newspapers and then we are apt to get a sharp hunch that we have been criminally negligent, for we almost missed the significant fact that fashions, like other great movements of mankind, are going "back to the farm." We do not mean that rural fashion philosophers are exhorting farmers wives and daughters to dress demurely and in harmony with the tones of their environments, in browns, greens and yellows. We are apt to get angry about that and dare not trust ourselves to preach about it. We have seen so much of exhilaration scintillate from the gorgeous coloring of a smart hat as it was drawn from its hiding place in a band-box under the bed in a farm shack, that we can never question its potency as a factor in rural uplift. It is a mistake to think that it casts its spell upon women-kind alone. As it ducks itself out of the low doorway of the shack all nature knows that a new sun has arisen: the strutting gobbler spreads his banner to it in conscious but hopeless rivalry; the cow renounces her cud in

feminine envy; the plow-horses gaze in mute admiration, and the spirited gelding breaks from his observation over the corral fence and seeks safety in flight from a thing evidently not of this world. To all of them, it is a token of some higher life, darkly desecrated but still existent. Even man, least discerning of all animals, is visibly abashed. We have seen the great cornucopia of fruits and flowers, plumes and ribbons, rising to its place on the high seat of the farm wagon, and shedding its radiance over a worshipful assembly of potato sacks and chicken-crates; the teamster being so affected by the phenomenon as to snatch the lines and actually drive out upon the highway before remembering to light his butcher-paper cigarette. It is a moving spectacle; a transforming force. And yet fashion writers in common journals dare exhort rural ladies to dress demurely and in harmony with their environment! It is blind stupidity. It is the duty of millinery to produce a shock; to shake mankind from the conventional—just as much on the farm as elsewhere.

Smocks and Smacks.

But the foregoing aspect of a great social question is just what we cannot trust ourselves to discuss, lest our temper break. As, however, the lady's hat is not particularly involved in the pending issue, we may, perhaps, be able to proceed calmly. It seems that fashion proposes to turn from drapings derived by artists for angels and goddesses to the historic garb of the old world farm laborer as suggestive of modern sempstresses' creations, which are thus described: "Modeled on the same loose lines as the actual peasant smocks, they reach to the knees and are made of loose woven linen in lovely shades of old blue, old rose, leaf green, orange, or in fact any shade you want them. Their round turned-over collars and cuffs may be of a contrasting shade or the same material and the smocking that characterizes the yoke in front, or back, or both, as you choose, is prettiest caught with thread of blending colors. They are indeed a charming as well as a practical adjunct to your summer wardrobe, either to slip on when you 'come into the garden Maude' and dig among your posies, or to wear just around the house in lieu of a regulation apron effect."

No doubt this is very appealing to the feminine mind. To the man it will be largely a matter of indifference. He will be found ready to smack at a smock, providing its contents does not mock at a smack—but that is immaterial. To those who are disposed to see something very significant in this "back to the farm" for fashions as betokening a new advance of agriculture in the public mind, we must claim that it does not yet dawn upon our intelligence in that way. It seems rather another of the delusions of near-farming by which mankind is being much deceived now-a-days. If fashion desires to pay a fair tribute to modern farming, let her discard the smock of obsolete farming in the old world and sing some variations to the keynote of the victorious American copper-riveted overalls—which are now chasing smocks off the land, even in Europe. These glorified smocks may serve well the city or suburban housewife to take up the job when her help closes its 8-hour day in time to go to the matinee, but for housewives of the farm we must commend attention to copper-riveted overalls. To wear such, gracefully,

may prove a very desirable feminine accomplishment, if the proposed 8-hour day should be decreed.

Queries and Replies.

Querists must submit full names and addresses.

Pith-Rot in Walnuts.

To the Editor: I am sending you the top of one of my Franquette walnut trees which were planted about February of last year, and are now 4 to 6 feet high. You will notice the stem is hollow. I took it first for the work of borers, but on cutting some of the trees down two or even three feet to the "green" heart have found no borer or other insect at either end. Now even two or three feet above the point where the apparently dead center stops there are green shoots like the one I am sending. Am I doing right in cutting the stem back to the "green" heart, even where good healthy shoots are growing above it? Is it proper at any time of the year to cut off shoots that are too low?—O. F. R., Los Gatos.

The pith which you exposed by cutting back at planting or in pruning last summer's growth early last winter, should have been immediately covered with grafting wax, asphaltum or simple lead and oil paint. This would have excluded water and prevented pith rot. You have now a choice of practice: first to close up the hole now, keep the shoots which are coming on the hollow stem and trust the injury to grow over this summer, which it will probably do if the tree has moisture enough for a long summer's activity. Your other choice is to cut back now below the extension of the rot and cover the wound at once. Choice of these alternatives would depend, with us, upon whether we found good strong shoots below which we could cut and get a well-shaped tree. We would rather take the chance of the healing over than to cut to dormant buds which might make your branching-head too low. Decay from the pith is not likely to invade adjacent active tissue on small shoots such as you send, if they are growing actively. The enlargement of the branch, by laying on of tissue on the outside, which is the way of it, will make a strong branch in which the early decay of which you speak will merely appear as a central black line, if you cut it off a few years hence to look at it. Cut away the lower shoots whenever you decide they are not desirable.

Apricot as a Border Tree.

To the Editor: I am contemplating planting out a border of apricot trees on my place in Sonoma county. The soil is clay, fairly heavy on the bottom land, and lighter on the rising ground. In your opinion would apricots make a good border around a young orchard? If so, what roots for the rising land; and also how close to the fence can I put these border trees? Will you kindly also advise what you consider the best distance apart to plant such trees?—Enquirer, Sonoma county.

Apricots are well suited for avenue trees by their beauty and longevity. They should have room enough to grow well and far enough from fences to be cultivated to retain moisture so that they will look well in the autumn. On the low land they should be on myrobalan root, and this will be good also for the upland if not too coarse and leachy. If you do not count on the fruit, apricot seedlings on their own roots will make good trees, and forty feet apart would be a good distance.

Plant Bugs on Strawberries.

To the Editor: I send a specimen of insects that are giving us any amount of trouble. They have now attacked our strawberries, and if they continue we shall have neither fruit nor plants in a short time. Will you kindly tell me how to get rid of them?—J. J. K., Soquel.

You have the common plant bug, *Largus succinctus*. They are very hard to kill with sprays because you cannot poison them and because anything you could use to kill by contact would also spoil the strawberries. Naturally, picking and crushing is about the only way to handle those insects when they come on at fruiting time. They live on weeds, and therefore are always ready to come in from wild lands when anything so tempting as a strawberry is in sight. You have to fight by "pickin' on 'em off."

Red Mites on Roses.

To the Editor: I note your reply to C. L. R., Watts Valley, in regard to rosebuds which fail to open. Our roses are affected the same way as described by your correspondent and I believe mites are killing the buds. In all affected buds I have examined I found numerous red mites, whereas in the healthy buds and fully developed flowers I find none. Can you tell me of any efficient method of dealing with this pest.—J. O. L., Bakersfield.

Thorough sulphuring is the handiest way to kill mites on garden plants. It kills by the vapor which the sunshine sets free—not so much by direct contact. Sulphur often checks rose mildew also, as has been previously stated.

Push, Frost or Pollination.

To the Editor: Can you tell what is wrong with my Satsuma plum trees which were set out eight years ago and have never borne fruit, though they blossom profusely. Also why do our walnut trees not bear. We were told they were a Luther Burbank creation, budded eight years ago on black walnut stock.—L. W. A., Napa.

One cannot even intelligently guess at the answer to such a question without seeing the trees and the situation. They may have been growing too fast or not fast enough. They may not have proper pollination. They may be in a frosty place. Get some local fruit grower to look the trees over and make a guess for you.

Flea Beetles.

To the Editor: Can you suggest a practical remedy for flea beetles which damage young beets, etc.—M. W. R., Kelowna, B. C.

Spray the foliage with whatever arsenical you use for the codlin moth.

Defoliating Orange Trees.

To the Editor: Does it injure citrus trees at planting time to cut the leaves off the trunk? The trees are being wrapped with burlap.—W. A. F., Lincoln.

It is much better to take the leaves off. It is often desirable to defoliate the whole tree, for then the moisture from the trunk is not drained by leaves before new root hairs are formed to supply plenty.

Safely and Not Very Efficiently.

To the Editor: Can hydrated lime be safely used on potato and strawberry plants to kill slugs?—Amateur, San Francisco.

It will not hurt the plants. It will tangle the snails a little while it remains dry, but they will tango over it all right as soon as it gets crusted by moisture.

Proper Cherry Picking and Packing.

To the Editor: Can't you do something, through the columns of your paper, to stop California cherry growers from shipping green cherries into this and other markets of the East. For two or three weeks past this green fruit has been on sale here in all the fruit stores, and it is an outrage upon the public. If these growers cannot be prevailed upon to stop this practice, the United States Government should be called upon, as in the orange case, to stop them. Our markets were formerly flooded with green oranges, but since the Government has interfered, we only get ripe oranges; now the same rule should apply to these cherry growers.

I have fruit interests in your State, and I dislike to see this kind of practice.

ALBERT YOUNG.

Kansas City, Mo.

[A grower in California recently remarked that he would be foolish to hold his cherries till they were ripe. It's the early cherries that bring the money, and that's what we are all after. Cherries do not sweeten or color on the road, as some other fruits do, and it is absolutely easy to tell what the consumer going to get when such cherries are packed.

Those who ship unripe cherries for the money of gullible but quickly undeceived Eastern buyers are unable to see the destruction that lies just ahead of them and their neighbors because of such practices. The "undeceived" customer is a customer no more, unless he forgets the lesson a year later when the fruit hunger is on him again. But just as soon as California cherries have to compete with those from less condemned districts, the demand for cherries is supplied with fruit from places, the memory of which is not so disagreeable. By that time, the California cherries may be the best on sale because they have been allowed to ripen on the trees, but the demand is lost.

There is, however, a justification for the greedy short-sighted shipper of unripe cherries, in that if he doesn't get that early money, he will take lower prices a little later and other greedy ones will gobble the earliest market. This is a condition which a few years ago could not have been remedied; but now it is a simple matter.

Both growers and shippers are well organized; in some places association officials are now hired to inspect impartially the fruit of all their patrons. An extension of this service to cherries, after adopting general rules as to ripeness throughout cherry districts of California, could prevent the shipment of unripe cherries and hold everybody back together till his fruit is edible. This would benefit even those who want to ship too early; it would benefit much more those who are conscientious and who deserve the most consideration; it would increase prices on the entire California crop by preventing the blackeye it now gets as indicated in the letter above.

PROPER CONDITIONS FOR PACKING.—For attractiveness on the market, all the cherries in a box should be uniform in color especially, and in size. A spotted box of cherries reminds one of a diseased complexion. G. M.

Chambers, who was six years foreman on the Buckingham ranch at Vacaville and now working for the F. B. McKevitt Co., contends that there should be nothing but solid color on cherries when picked. Chapmans should be light red. None of the "white" varieties of cherries should be picked until all of the green has turned to a light straw color for the background. The "black" varieties should be left in the trees till they look black as they hang among the dark leaves; if picked then they will show a dark red when packed in the box, for they are not so black as they look in the trees. In this condition they will reach the consumer 10 to 20 days later with as good quality as possible, provided they are not bruised in packing and handling.

PACKING CHERRIES.—Though some cherries for Eastern shipment are now packed in small cartons, by far the most of them are packed in 10-pound standard cherry boxes, each of which is rubber-stamped "Net weight 10 lbs." to conform to the net container laws of New York and California. No one knows, when a car is started to auction, whether it will be sold in New York or another State. Some growers stamp their own names on all boxes; all growers stamp the name of the variety and the number of cherries required to make a row across the end of the box. The grower's name has great advertising value if the cherries are ripe, sound and well packed. The size and variety are stamped for the convenience of buyers in the Eastern auction markets. The boxes are partitioned into two square compartments so that a 12-row size will be packed 12 cherries on each side. If a box were out of square, this would be impossible, and the cherries on the face would not be in straight lines from which ever way they might be looked at. To insure squareness in making the boxes, the ends and partition are placed in a vice and one side nailed on. Then they are turned over and the other side fastened. The thin board which is the top cover is then nailed while the frame is still in the vice, ½-inch cleats being used across the ends. A packed cherry box bulges in the center, the top and bottom not being nailed at all. If they were piled up in a car without the end cleats to hold the weight of the upper boxes off from the bulge, there would be a lot of cherry wine dripping along the railroad track.

The inside edges of the sides, partition, and ends are smoothed down to a curve, instead of being left sharp. This helps prevent cutting of cherries on sharp edges when the covers are nailed down. Women are commonly the only packers; in the Vacaville district they work mostly by the day; if they do piece work, the price is 15 to 17½ cents per box. In packing around the edges, they often are seen to carelessly jab a cherry against the edge, and it would be cut or bruised if the edge were sharp. In the past year or two, rubber mats have been used to facilitate the selection of sizes for packing. The mat is laid inside the half box, against what is to be the top. This leaves the side upward, which has depressions into which the cherries will be laid. They are made for 10, 11, 12, and 13-row fruit and cost a

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dollar a pair because they are patented.

If a packer selects a 13-row size and tries to pack on a 12-row mat, her mistake is quickly recognized, because the cherries do not touch each other. This is important. Every cherry should just touch the next without being squeezed to put it in place. The squeeze makes a bruise which shows up on the market as a dirty brown spot on the white varieties, and in any case it is a spoiled cherry for eating. There is this advantage, however, that a spoiled cherry in a box seldom spoils its companions by contact.

Each cherry is handled separately in the double facing. Theoretically, the packer looks at it as she holds a bunch in her hand; then picks it up and looks at the other side before laying it stem upward on the mat. The second layer is "nested" on the first; that is, each cherry is laid in the hol-

low between four other cherries. The double facing is a rather recent practice, since too many stems showed through the spaces with single facing.

With the largest cherries, only three layers can be put in a box, and all are "solid" packed one by one. But the early varieties are mostly smaller and the box is filled promiscuously on top of the double face. Then a layer is put on for the "finish," all stems downward this time, though the cherries are not put in regular rows; for this "finished" side is to be the bottom of the box. Sometimes two varieties are packed in the two compartments, but not many so. A man then nails on a single thin board securely for the bottom, and pries loose one end of the top to inspect the facing and take out the mat. Often a stem protrudes, and this must be pushed in with a nail or the box repacked. Often off-color cherries are found, or bird-pecked or misshapen fruit which must come out. The boxes are then stamped and shipped.

In 1913, the first and last shipments, by varieties, from the Vacaville Fruit Growers' Association, were as follows: Belle d'Orleans, April 21-May 1; Rockport, April 28-May 20; Chapman, April 29-May 13; Purple Guigne, May 4; Burbank, May 6-23; Guigne Marbree, May 12; Black Republican, May 15-31; Bigarreux, May 16-25; Bing, May 20-27; Pontiac, May 20-30. The season is about a week earlier this year, but cool nights and fog in the hills are delaying the ripening so that it may last considerably longer.—

EDITOR.]

NEW TREES IN OLD ORCHARDS.

To the Editor: In re-setting our peach orchard as the old trees die out, we note a lack in the vigorous growth we first had. Of course it is due to soil conditions. Now for future plantings; would it be advisable to procure almonds for stock? And would nuts from a vigorous tree of the sweet variety be preferable to peach pits? Would not heavy fall fertilization be what the young trees mentioned need? —Mrs. M. H. W., Fowler.

[Not knowing your soil and drainage, we cannot say which root would be best for replanting. If the old trees are thriving, we think the trouble with the young ones is not lack of fertility. It might be lack of moisture or lack of drainage, but most likely it is lack of sunlight. Young trees are always hard to start in an old orchard because too much shaded.

W. W. Smith, Richard Burton, and M. S. Sharpe of Vacaville, who have had far more than ordinary experience in this line, recommend Mariana seedlings or cuttings to fill spaces in old orchards. The seedling will grow to a fair sized tree, when it may be grafted to the variety desired. He might not recommend the grafting of a peach on this stock, as plum stocks for peaches have quite largely gone out of use. If the soil is wet, almond stock will not be so good as peach. If reasonably dry and well drained, sweet almond stock is good and in general use, though bitter almond is growing in favor. P. D. Bane of Orland uses bitter almond in his nurseries for almond trees, because he believes the bitter variety is hardier. He does not use peach stock much on account of its reputation for short life.—

EDITOR.]

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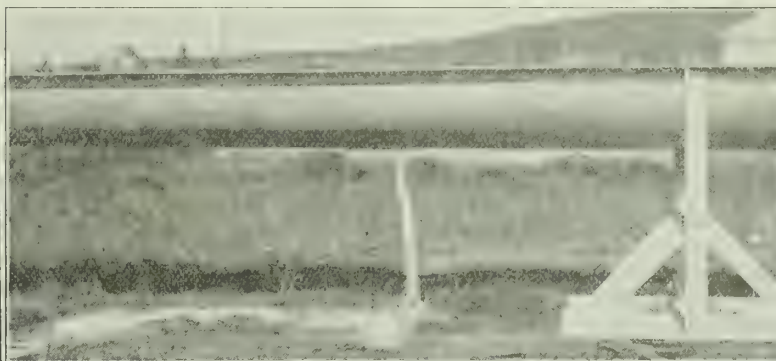


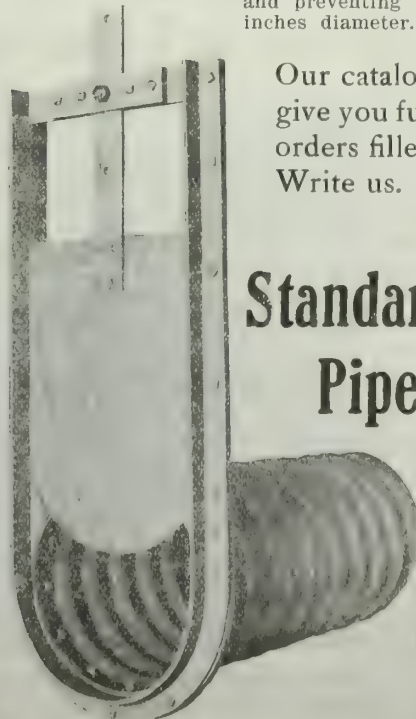
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(Continued From Page 589.)

will be made by turning it under. But without irrigation it must be plowed before the last sufficient rain has dried out, for then it would turn over in clods, requiring laborious and poorly successful disking and clod mashing.

Land is ready to plow if a handful of it squeezed is crumbly. If soggy, it is too wet. If the plow turns the dirt over sleek and shiny, it is too wet and will very shortly harden into dry clods. It should fall to pieces as the plow turns it over. Then without a chance to dry, it should be harrowed time after time all summer. Occasional deeper cultivations with narrow shovels or rather flat disks will cut deeply into the packed under-soil and yet will not bring much moist dirt to the surface. It is easy to see that if land is left in ridges, more surface is exposed to the drying sun and air. At the University Farm some of this deep cultivation was being done early in May on finely pulverized soil in their young orchard. Tramping of horses, men, and weight of machinery and of the soil itself had settled it so a man could walk through comfortably. But following the cultivator, his feet would sink in and dirt would get into his shoes. Among the best cultivated orchard sections of the Sacramento valley is that around Yuba City. In L. A. Walton's 80-acre peach orchard a Caterpillar pulls a 10-foot double disk in which the rear section throws dirt in the opposite direction from the front one and a harrow trails behind to smooth it all down immediately.

On the gravelly hills near Corning, R. L. Fuller plowed his olives and oranges 8 inches deep the first of March and in two months had harrowed five times, though he has a fine pumping plant for irrigation.

At Los Molinos close to the river, J. A. McCuen has found that he must cultivate the land while moist or it will become hard as brick until watered again. He raised some sweet potatoes last year as big as his wrist and a foot long but when they were plowed out, the chunks had to be soaked to get the sweet potatoes loose.

A large number of Sacramento valley orchards are cloddy. This is caused either by plowing the soil when too wet, or by allowing it to dry out after plowing and before harrowing. Three days of drying north wind caught a great many ranchers; clod mashers are now in order unless they can soak the clods and then harrow so soon as the ground is dry enough not to cement together under the horses and machinery.

Clod mashers are of many types, from a series of 2x6's, slanted flatwise to the ground and a few inches apart, to the more elaborate, expensive, and effective one recently observed doing exceptional work on hard clods.

It has been a continual surprise to see some farmers driving back and forth on some of the clod mashers commonly in use; for the only effect observed has often been the pressing of the clods down with very slight smoothing of the surface and little real clod breaking. Better either make the clods crumble noticeably, or use time and horses otherwise.

Disking is often but not always effective, but a modified disk recently

seen did good work on hard clods. It was 7 feet long, weighed 1750 pounds, was pulled by four horses. The disks were of heavy cast iron with saw edges reasonably sharp, and at the bottoms of the notches between the teeth were narrow crosspieces 2½ inches long and about that far apart. The disks had about two inches play on the axle and were not tight against each other. Clods that got between them were ground as in a corn sheller; clods that were run over by those teeth were crushed.

Having pulverized the ground, the next thing is to keep a dust mulch on it without exposing moist earth.

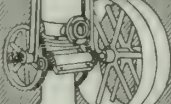
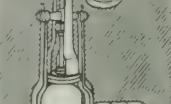
J. E. Burgess of Santa Rosa uses a horizontal cutter bar attached to wheels so that it runs a few inches under the surface and simply lifts that much dirt letting it slide over and settle down again all pulverized. What seems a still better device and much cheaper, was seen in operation recently on the Stanford Vina ranch, and most highly recommended by M. T. Sharpe of Vaca Valley. Under a 2x10-inch plank 6 feet long are bolted five knives so bent that they project diagonally behind; and when the plank is dragged over the ground, the knives cut about three inches deep in the soil but allow roots and stalks to slide off. It cuts weeds loose and pulverizes the soil by the joint action of the plank as a semi-clod crusher and the knives as dirt looseners.

VENETIAN RED PAINT.

To the Editor: Is there any cheap paint that can be made with Venetian Red that can be sprayed on, also that will last on hog fences and rough boards.—M. W. R., British Columbia.

[By mixing the Venetian Red with linseed oil, and then thinning liberally with cheap distillate or gasoline, you can apply it with a spray as you suggest, although the preserving qualities of the mixture will not be all that it should be. We believe that for fence work you will find it more profitable to apply a better grade of paint by brush, as in using a spray for such work there is bound to be considerable waste.—EDITOR.]

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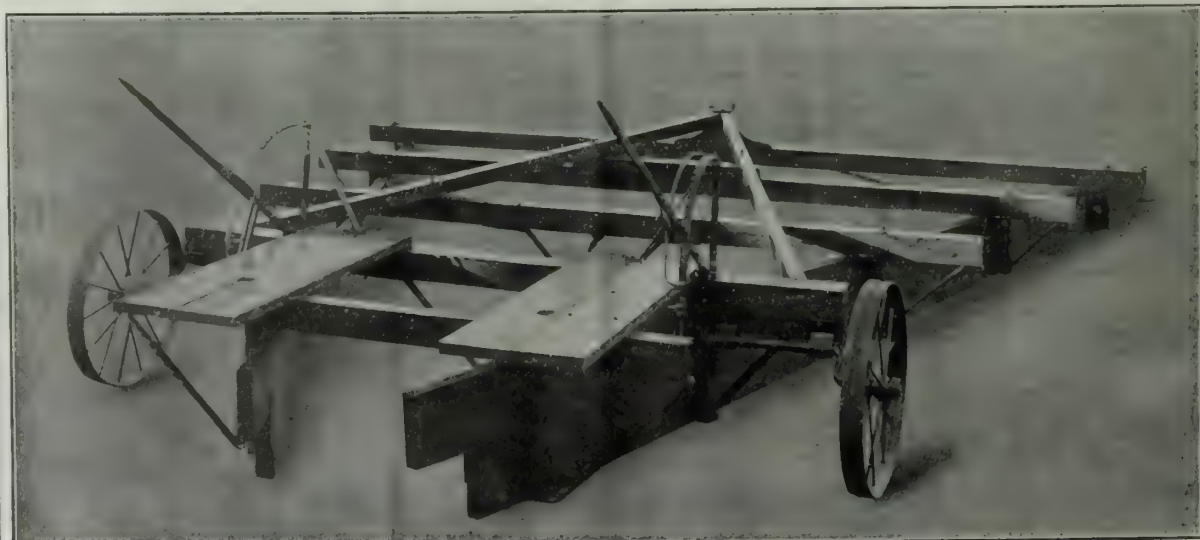
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SCHMEISER MFG. CO., Davis, Cal.

Fruit Crop Estimate for Week Ending May 14, 1914.

[Compiled for the PACIFIC RURAL PRESS.]

The usual causes of crop reduction operated somewhat more heavily this year over a large part of the State. Effects of the past dry years did not show up at blossoming time, but the buds were so weak that fruit failed to set in anything like the promised proportion. It is characteristic of trees about to die that they put practically all of their energy into blooming and effort at fruit production. Trees which bloom earlier than they leaf out, such as cherry, in many cases used all their strength this year on the bloom and are now dead. In only two or three limited sections did late frost hurt anyone, but it is generally conceded that the warm spell and hot winds of March dried up the blossoms and is one large factor in the reduction of crop percentage over most of the State. Disease and insect pests have done very slight damage. More or less cool weather is delaying the ripening of crops. Citrus and olive trees have bloomed in most parts of the State and the fruit has set splendidly, but nothing will be known about the drop till next month. Cold weather, rains, and frost have hurt peaches and prunes in the Northwest. The estimated percentages of crops given below are taken mostly from special reports of the county horticultural commissioners to the PACIFIC RURAL PRESS. These gentlemen are frank to say that their estimates are not so accurate as they would be if time could be taken to make regular tours of their counties for this purpose. However, we take it that their estimates are the most accurate and impartial available, espe-

cially when supplemented by the reports we receive from large growers. The figures for number of trees are taken from assessors' books and are admittedly inaccurate, but are the best available and are valuable to show the relative importance of the fruits in the various sections.

Counties reporting on:

Almonds—Alameda, 40%; Butte, 60; Colusa, 100; Contra Costa, 30; Glenn, 100; Lake, 100; Los Angeles, 100; Madera, 75; Monterey, 50; Napa, 40; Nevada, 100; Sacramento, 30; San Joaquin, 25; Shasta, 90; Sonoma, 25; Tulare, 90; Yolo, 60; Yuba, 70.

Apples—Butte, 80%; Colusa, 100; Contra Costa, 75; El Dorado, 75; Humboldt, 100; Lake, 100; Los Angeles, 90; Madera, 85; Monterey, 50; Napa, 90; Nevada, 100; Sacramento, 100; San Bernardino, 50; San Diego, 80; Santa Barbara, 100; Santa Clara, 50; Santa Cruz, 70; Shasta, 75; Sonoma, 80; Tulare, 90; Yuba, 75.

Cherry growers are in the midst of a rather light harvest.

Figs of First Crop—Butte, 100; Colusa, 100; Glenn, 100; Los Angeles, 100; Madera, 100; Nevada, 90; Shasta, 90; Sonoma, 75; Tulare, 100; Yuba, 100.

Citrus fruits, olives and grapes are not far enough advanced to forecast.

Walnuts (early varieties)—Orange, 60%; Santa Barbara, 60.

FRUIT IN SANTA CLARA VALLEY.

More prunes stuck than were previously reported, so that if conditions improve as well from now till ripening there may be as many as last year, which was 40,000,000 pounds or one-third of a full crop. Peaches are a

full crop, according to the county grange reports, and 80% according to Horticultural Commissioner Earle Morris. Apricots, 75% for the county. Irrigated flat land has heavy crops; lighter elsewhere. Cherries, 40%, Royal Annes particularly light. Apples, pears, almonds spotted, 50%. Those varieties of walnuts well set seem about 60%. Franquettes not yet leaved out, some others an inch in diameter.

LATE SALES OF DRIED FRUITS.—Apricots are being sold at 10 3/4 cents; French prunes at 6 1/2; and Imperials at 13 cents flat. There is a feeling that prices will go higher.

FRUIT IN SAN JOAQUIN COUNTY.

The fruit prospects of San Joaquin county have been materially changed during the past month and reliable advices are to the effect that the following estimates will be very close to the ultimate crop harvested: Almonds are given as being about 25% of a full crop by some, although others place their figures as high as 50%, the Ne Plus Ultra being best of the Hatch varieties and the IXL next. Drake's are given as 75% of a full crop for the San Joaquin and Contra Costa counties by a large almond purchasing concern. The prospects at this time, May 18, are for a fine crop of grapes of all varieties, in San Joaquin county, and while some are predicting more than 100% of a crop, more conservative growers state that it is still too early to predict with accuracy what the crop will be, agreeing that present indications are exceptionally fine. In the Acampo district, prunes are still dropping.

Nevada county horticultural commissioner D. F. Norton writes that peaches are overloaded, walnuts loaded to full capacity, Bartlett pears 75%, all other pears overloaded. Hungarian plums dropped heavily.

DECIDUOUS FRUIT SHIPMENTS.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE, Manager California Fruit Exchange.]

Up to May 15 about twenty cars of cherries, including two part cars of apricots, with a small amount of peaches and plums, have been shipped from the State. Those that have arrived sold at very satisfactory prices, ranging as follows in the different markets:

Chicago—Advance, \$2.35 to \$2.80; Tartarians, \$2.14 to \$4.25; Oxhearts, \$1.50 to \$1.85; Chapman, \$1.80 to \$2.95; Governor Wood, \$1.55; Rockport, \$1.59 to \$1.85; Guignes, \$1.43.

Pittsburgh—Tartarians, \$2.42 to \$4; Oxhearts, \$2.75.

New York—Advance, \$1.90; Tartarians, \$2.90 to \$4; Chapman, \$2.30; Rockports, \$1.77.

Philadelphia—Burbank, \$1.40 to \$2.60; Tartarians, \$1.65 to \$3.50; Chapman, \$1.45 to \$2.95; Rockports, \$1.25 to \$2.70.

Cleveland—Chapman, \$2.32 1/2.

There is every indication of a very early season and tree fruits are at the present time abnormally large.

Georgia anticipates shipping 5000 cars of peaches; the early varieties will move about the first of June. On account of light crop in Texas, Georgia shippers will probably market a portion of their crop as far west as St. Louis and Chicago, which opens up a new field of competition for the California shipper, in so far as Georgia is concerned. This long haul of Georgia peaches, however, will be permitted only under favorable weather conditions. Brown rot develops in the Georgia peach as a result of rain during the harvesting period, and, if the weather is unfavorable, Georgia peaches, which are not very good carriers, will have to be confined to short hauls, or, in other words, Atlantic seaboard markets, leaving the west open to California fruits.

DECIDUOUS FRUIT CROP ESTIMATE FOR WEEK OF MAY 14, 1914.

COUNTIES.	Apricot Trees in Bearing	% of Full Crop	Plum Trees in Bearing	% of Full Crop	Prune Trees in Bearing	% of Full Crop	Peach Trees in Bearing	% of Full Crop	Pear Trees in Bearing	% of Full Crop
Alameda	415,000	80	15,000	...	11,600	20	8,400	60	56,000	60
Butte	7,545	...	...	...	84,405	30	133,638	100	13,199	70
Colusa	17,000	100	...	100	92,500	30	13,000	75	7,000	100
Contra Costa	53,100	35	2,840	30	54,220	35	28,200	70	73,500	25
El Dorado	400	...	1,000	80	124,000	50	110,000	90	70,000	75
Fresno	145,600	...	10,600	...	83,000	...	3,270,000	...	...	...
Glenn	...	...	...	...	...	30	...	100	...	...
Humboldt	...	...	...	...	...	100	...	100	...	90
Kern	25,000	...	6,000	...	4,100	...	50,000	...	1,500	...
Kings	79,600	100	...	100	6,860	100	386,200	100	...	...
Lake	1,975	...	...	...	29,622	35	5,829	100	24,850	40
Los Angeles	200,300	100	53,000	100	61,710	...	218,720	100	75,000	100
Madera	10,000	35	...	...	...	90	70,000	100	...	...
Mendocino	500	...	2,000	...	20,000	...	10,000	...	10,000	...
Merced	8,250	...	...	...	1,525	...	148,401	...	4,250	...
Monterey	25,000	100	1,100	25	3,350	25	9,500	70	6,200	75
Napa	17,000	25	120,300	50	91,180	25	107,880	25	69,120	50
Nevada	170	100	2,300	60	5,800	30	12,760	100	36,270	90
Orange	167,240	...	...	...	17,320	...	38,350	...	...	...
Placer	7,485	...	239,000	75	20,465	...	994,250	100	104,600	...
Riverside	66,317	...	...	...	22,128	...	45,293	...	12,151	...
Sacramento	20,000	90	7,600	80	100,000	20	65,000	90	220,000	75
San Benito	40,000	80	2,700	...	125,000	50	15,000	...	6,000	...
San Bernardino	26,200	88	...	100	2,800	...	8,250	85	18,500	80
San Diego	9,140	85	...	...	3,240	...	8,760	75	2,318	...
San Joaquin	70,540	75	18,350	...	52,815	20	234,130	75	27,425	50
Santa Barbara	3,450	100	...	...	1,250	...	2,325	100	715	100
Santa Clara	600,000	75	271,000	...	5,357,900	33	610,500	80	131,200	50
Santa Cruz	56,440	...	...	...	99,096	...	10,594	...	14,286	...
Shasta	6,500	90	1,000	100	87,500	25	46,000	90	30,000	90
Solano	237,800	...	110,000	...	465,000	...	490,600	...	203,000	...
Sonoma	23,450	50	6,700	75	598,040	25	28,670	80	81,270	100
Stanislaus	11,500	...	5,300	...	8,190	...	200,410	...	6,820	...
Sutter	4,804	...	...	...	39,922	...	130,854	...	11,809	...
Tehama	64,410	50	6,000	...	115,700	40	679,400	100	63,050	...
Tulare	32,075	90	12,000	75	137,935	60	348,170	100	3,287	90
Ventura	200,000	...	...	...	19,000	...	7,800	...	...	...
Yolo	121,520	40	3,500	50	98,800	40	146,600	70	51,000	50
Yuba	18,750	40	...	50	5,055	25	69,555	70	14,450	60

SCALEFOE

The Best Spray or Wash for Scale and Red Spider.

SCALEFOE

Will not injure the Plant or Tree, if used according to directions.

SCALEFOE

Quart can 20c—Two-Quart can 30c—Gallon can 50c—Five-Gallon can \$2, freight prepaid. Special price for Barrel lots.

WEST COAST SEED HOUSE,
116-118 E. 7th St., Los Angeles, Cal.

MAY, JUNE AND JULY

are the best months to plant Orange and Lemon trees.

Citrus trees, being semi-tropical, require warm ground to start root action. If you have any water at all, plant Now.

Special Prices (per 100):
Eureka Lemons, 5/8-in., balled...\$60.00
Navel Oranges, 5/8-in., balled...\$55.00
Stock guaranteed free from scale.

Write us for prices on other sizes and get our special offer on Avocados. Catalog free.

PIONEER NURSERY, Dept. A,
Monrovia, Cal.

WHITTIER COBURN CO. S.F. SOLE MFRS.

The Vegetable Garden.

SMALL CITY AS A VEGETABLE MARKET.

[Written for the PACIFIC RURAL PRESS.]

While we were in no sense practical farmers when we purchased our land, we soon learned that, though cultural methods were to be first considered they were not the last or most important; for while we were located close to a large city here in California, we found that neighbors were sometimes losing practically their entire time, plus cost of water for irrigation because as they said, "there was no market."

We wondered whether this was true, whether it was a case of letting the other fellow run the market end while they were busy growing the crop.

A Chinese tenant nearby, who was paying a stiff rent, and was at a great disadvantage for lack of education, was finding a market for everything he could grow on a ten-acre patch. While he was close to a large city market, he preferred to sell in a smaller town some five miles distant; not peddle, but actually sell to the city merchant. We found that his reason for selling in the smaller town was that the majority of other truck gardeners were sending their truck to the city, thereby oversupplying the market

and oftentimes bearing down the prices to ruin for the grower. In the smaller market he could deal with the retailer direct, and know before unloading his wagon how much real money he was to receive; instead of waiting for the city commission man to submit his report less transportation, selling fee, etc.

Our first attempt at marketing our own produce was made with Crimson Winter rhubarb. We had taken great pains in growing an acre of what neighbors told us was an excellent quality, obtained through a liberal supply of sheep, horse, and cow manure and regular irrigations during the fall months. About the time our first barb got ripe, we took a trip to the larger market above mentioned, to look into the price being offered and to find any other market pointers possible.

In our daily paper we had seen a quotation of \$1.25 a box and had built up our hopes on this basis; but when we asked the commission man the price we were informed that they were paying 90c. a box for choice stuff. We looked at a few of his best samples, and remarked that ours was far superior to his. With a smile of derision or unbelief, he walked away advising us to send him some and he would see what he could do for us. Well, we decided right there that with our limited capital we had no business trying to educate that fellow and his trade up to paying the price that our barb was actually worth, although we still believe that with enough educational work it could be done; for it was afterward done in a smaller way elsewhere.

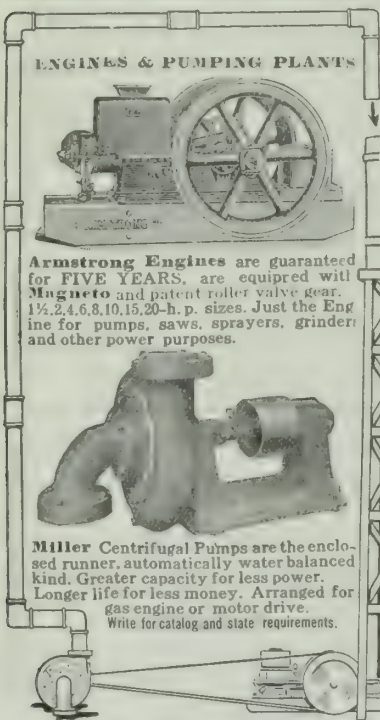
In getting that price the grower was compelled to pay 11 cents for a suitable box, pay freight, and a commission of 10 per cent, taking his chances with the market.

Now that didn't look good to us, as the best we could hope for was around 68 cents net. Upon that rhubarb patch however depended our living for the time being, so we went to the smaller town with a bunch of barb in a paper and made a trip through the business district soliciting orders. One look at our barb, and an assurance that if it did not all grade up to the standard, they would not have to pay for it, was sufficient to get the first order, and that too at \$1.40 a box, delivered.

That was the beginning of our market, and we took good care to see that we held it, packing only the best stalks and trimming and washing each one before it was packed. That the consumers as well as the merchants appreciated our efforts was shown by the increased demand for our product which practically supplied the entire town with winter rhubarb at a higher price and in greater quantity than ever before.

That experience showed why the Chinaman preferred the smaller market, because he could get closer to his consumer and therefore better cater to their wants.

Our next crop harvested was cabbage; and as everybody else had planted heavily that year, the price was poor. Eastern shippers were paying about \$12 net per ton to the grower, but we could not sell even to that market, for such buyers purchase where there is a big acreage planted,



ENGINES & PUMPING PLANTS

Armstrong Engines are guaranteed for FIVE YEARS. are equipped with Magneto and patent roller valve gear. 1 1/2, 2, 4, 6, 8, 10, 15, 20-h. p. sizes. Just the Engine for pumps, saws, sprayers, grinders and other power purposes.

Miller Centrifugal Pumps are the enclosed runner, automatically water balanced kind. Greater capacity for less power. Longer life for less money. Arranged for gas engine or motor drive. Write for catalog and state requirements.

Norman B. Miller Co. San Francisco, Cal.
503 MARKET STREET

SPRAY WITH
**HEMINGWAY'S
LEAD ARSENATE**

EASY TO MIX
STAYS IN SUSPENSION
HIGH ANALYSIS

Send for booklet and prices.
Full stocks carried by Coast Agent.

C. HENRY SMITH,
California and Battery Sts.,
San Francisco.

Hemingway & Company, Inc.,
1 Broadway, New York.

EUCALYPTUS

we can yet supply Blue Gums by the carload, and invite correspondence.

W. A. T. STRATTON, Petaluma, Cal

Water! Water!! Irrigation! Irrigation!!

Don't worry about a dry season. Insure against a failure of crops by boring wells, thereby securing a bountiful supply of pure water.

W.W. Montague & Co.

Established 1858

PIONEER MANUFACTURERS OF

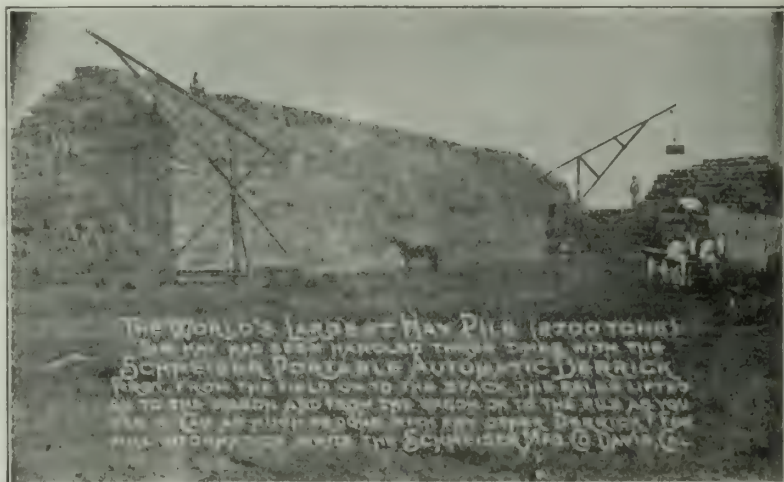
WELL CASING

Double or Single, Black or Red Steel and Galvanized.

50 years' experience; employment of skilled mechanics, operating modern machinery, using best quality of steel specially rolled for casing, enables them to produce a superior quality, to meet the requirements of well-borers who pronounce Montague's Casing the Best.

Montague casing put in wells in Santa Clara County 50 years ago giving good service today.

557 Market St., San Francisco



A WONDERWAY THROUGH PICTURELAND

WESTERN PACIFIC DENVER & RIO GRANDE

Unfolds to the Traveler a Magnificent Panorama of Snow-Capped Peak, Canyon, Gorge and Crag.

Marvelous Scenic Attractions Seen from the Car Window Without Extra Expense for Side Trips:

Grand Canyon of the Feather River	Canyon of the Grand River
Pilot Mountain	Eagle River Canyon
Mirage Land	Tennessee Pass
Glistening Beds of Salt	Mount Massive
Great Salt Lake	Collegiate Peaks
Salt Lake City	Grand Canyon of the Arkansas
Castle Gate	Royal Gorge
Glenwood Springs	Pikes Peak

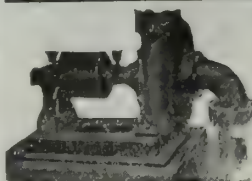
CHOICE OF TWO ROUTES THROUGH THE ROCKY MOUNTAINS

Through Standard and Tourist Sleeping Cars between San Francisco, Oakland, Sacramento and Salt Lake City, Denver, Kansas City, Omaha, St. Louis and Chicago.

Illustrative booklets descriptive of "The Scenic Route to the East" free on request.

E. L. LOMAX
Asst. Pass. Traffic Manager
San Francisco, Cal.

F. A. WADLEIGH
Passenger Traffic Manager
Denver, Colo.



PIONEER CENTRIFUGAL PUMPS
Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.
Our retail prices are less than our competitors' wholesale prices.
We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.
PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

as they do not wish to be bothered with the small fry.

Having established a reputation in the smaller city, we looked there for a cabbage market, finding that it too was receiving heavy supplies daily from Chinese and others. One merchant stated that farmers were as crooked as other classes. Pointing to a bunch of cabbage leaves which were being thrown out, he said: "If you fellows would clean up those cabbages we could afford to pay you a better price."

The hint was sufficient; and the next time we came to town we had five sacks of cabbage, all of which had been vigorously trimmed, leaving the heads nice and clean looking. There was no lack of a market for this kind of cabbage and we had orders for a two horse wagon load, the next day, at 60 cents a sack, ordinary kinds bringing 50 cents at that time.

Did it pay? Well, after counting the loss in bulk we probably did not receive any more for the patch than we would have at 50 cents a sack, but it paid, inasmuch as we sold our entire crop while others let theirs go to seed for want of even a 50 cent market. Also we had gone that much farther toward establishing our name for good vegetables among the merchants. This was again felt the next year when the price was better, and that year we got a still better premium.

A small patch of cauliflower was sold in a good deal the same manner, care being taken to see that each head was carefully trimmed and packed, the badly browned heads, or those worm eaten, being thrown out.

Potatoes came next with us. This time we did not have to look for our

market as everybody was wanting potatoes, even coming out to our place and buying them before they were ripe. We dug them at once to get the fancy prices and the returns were most satisfactory.

We also learned another lesson in marketing. A restaurant owner made us a visit and agreed to pay a premium, provided we would grade the potatoes; for, as he explained, unless that was done in the field, his men must sort them into a large size for shoestring fries, and a smaller size for boiling, baking, and stewing. He paid us 25 cents a sack more than otherwise and at practically no extra cost to us as we used two buckets in picking them up.

We had raised about 150 hens and when they started to lay we tried to sell the eggs. Now most of the dealers who had handled our vegetables so far, also handled eggs, for which they were paying at that time as high as 40 cents a dozen, and for which they were charging the consumer 50 to 55 cents.

This was too wide a margin, so we made a trip through the better class residence district, soliciting from house to house and explaining that we would make two deliveries a week at the same price the merchants were charging. We also guaranteed the freshness of our eggs. From a start of but two or three customers gained in this way, we soon had a good trade worked up. We later found that the candy and ice cream stores would take some of our eggs on the above conditions. This, with our resident trade, kept our chickens busy laying to supply the demand, and many times we were compelled to buy from our neighbors, care always being taken that theirs were of as good a quality as our own. If we had enlarged this feature as we could easily have done, it is likely the stores would have placed a ban on our vegetables, but the eggs from our own flock cut so little figure in the total amount used in the town, that they did not consider it worth while to stir up a fight. For by this time they were as anxious to get our stuff as we were to sell, for they knew they could recommend it to their customers with no fear of complaint.

We believe the majority of small truck growers make the biggest mistake when they ship to the big city markets, like San Francisco or Los Angeles; for the immediate country around both of these places supplies a surprisingly large amount of truck. The counties of San Francisco and San Mateo not only supply all of the small truck that the city consumes, but also supply cauliflower, cabbage, and artichokes to ship hundreds of carloads east every year.

Another fault with these markets is that unless you are a large shipper, the commission man is bound to treat you in the same manner that he does hundreds of others, until such time as you can show him that your brand means quality. This usually means failure for the little fellow. The game is not waiting one with him; to be successful and to establish a name or brand in a large city, where thousands are shipping into the same market daily, requires more than one or two years time.

It might be well for the grower to break into this bigger game, when he has once made good in a smaller way, but at the start we say, "open your home market first."

Lowest Prices on All Sizes Duck Irrigation Hose Canvas Wagon Covers Tents Grain Bags and Twine

Write for Catalog and Discounts

W. A. PLUMMER MFG. CO.
37 FRONT STREET San Francisco, Cal.



The Best Pipe on the Market

That's a pretty big claim but we can prove it. Just write us to-day and we'll send you the reasons why this pipe is the strongest and most economical one on the market.

"Western"

Surface Irrigation Pipe is riveted instead of lock-seamed. The rivets give strength, and greatly reduce the possibility of leakage. Once you have used "Western" Pipe you'll wonder how you ever did without it—but write us now and we'll explain in detail.

We make Riveted Pipe, Riveted Well Casing, Steel Tanks and Irrigation Supplies.

Western Pipe and Steel Co. of California

450 Market St., San Francisco 1764 North Broadway, Los Angeles
Branches: Sacramento, Fresno and Taft

TREES

PEDIGREED AND TRUE

Our soil grows good roots and a hardy tree, while our foothill district is free from every disease or pest.

Write us now concerning
Your next season's planting.

Our Assortment is Complete.



THE SILVA-BERGTHOLDT CO.
P. O. Box 177 Newcastle, Cal.

GILLESPIE'S EUCALYPTUS HARDWOOD

FOR

Wagons and Implement Materials

Tongues, double trees, single trees, neck yokes, harrow frames, rakes, etc.

15% stronger than second growth Hickory. Better and cheaper than any other hardwood. Makes most beautiful veneer for paneling.

Special orders filled on short notice.

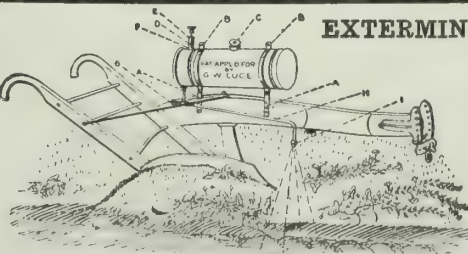
T. J. GILLESPIE HARDWOOD
PLANING MILL CO.

515 W. Fernando St., San Jose, Cal.
Seed of "San Jose" Eucalyptus for sale.

ORANGE SEED

Just received a large shipment of Florida Sour Orange and Grape Fruit Seed. Write for prices.

THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.



EXTERMINATE MORNING GLORY

Johnson Grass, Bermuda Grass, Noxious Weeds and Injurious Insects with NONPAREIL and the PRESTO PLOW TANK

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, \$8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

The growing season and not the dormant period is the right time to do the work.

One large grower purchased during 1913 \$2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphids, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

WHEELER, REYNOLDS & STAUFFER
624 California Street. San Francisco, Cal.

Second Hand **PIPE** Screw Casing
ALEXANDER PIPE COMPANY
OFFICE—254 No. Point Street, San Francisco, Cal.—WORKS
1611 E. 6th Street, Los Angeles, Cal.

AGRICULTURAL REVIEW.

Crop Report Notes.

Sour-sapping of young trees has been quite general over the State due to poor drainage of the winter rains, to the killing of root hairs by past drouthy seasons, and, as reported by J. E. Hassler, of Eldorado county, due to the warm weather in March followed by the cold spell. H. A. Weinland, of San Diego county, remarks the same causal conditions.

Crops in the San Joaquin valley seem to have suffered less than in most parts. Humboldt county and Los Angeles county report very good conditions.

Monterey berries are reported 100 per cent.

The light walnut crop in Orange county is ascribed to damage to buds by hot weather last September.

San Bernardino county commissioner S. A. Pease wishes a question mark after his percentages, due to "unusually freaky weather." He estimates 95% orange and lemon prospects.

Yuba county reports prospects of a normal Thompson Seedless crop. Some varieties of peaches 50%, but Muirs 75%. Apples in the valley, 60%; in the mountains, 90 per cent.

Rain at blossoming time in Sonoma county is blamed for lack of pollination and for blossom rot due to the moist calyxes clinging to fruit.

Prunes in France are reported considerably damaged.

Grain and Hay.

Grain in the Sacramento valley up through Shasta county is looking fine.

Monterey county reports heavy grain and grain hay.

Alfalfa and grain hay have been showing up in big cocks thickly piled over the fields of Sacramento valley, being a little lighter in the southern end.

Grain prospects are reported fine in Oregon and Washington.

The U. S. Department of Agriculture estimates that one-eighth of the 1913 hay crop is still on the farms. This is 7,830,000 tons, as compared with 10,828,000 a year ago and 4,744,000 tons two years ago. Of this, 396,000 tons are in California, which is 50,000 tons more than on May 1, 1913.

Livermore valley hay-makers have not liked the damp weather, but grain is filling well.

Winter wheat states have abandoned 1 to 15% of their previous acreage in winter wheat, 5% of the former California wheat land having been used this season for other crops. Its condition in this State is estimated at 95%, as against 62% a year ago and 80% for a 10-year average.

Sutter county first crop alfalfa is cured and selling in the field at \$5.

Kingsburg, Fresno county, has samples of barley 5½ feet tall, wheat 6 feet, oats 6½ feet, and rye 7½ feet, taken from fields cut for hay.

Barley crop of California for 1914 is estimated at 100,000 tons more than ever before. While there seems a good chance for 800,000 tons, it is well to remember that estimated crops are subject to revision.

Butte county is to have nearly 20,000 acres of rice this season.

San Joaquin county has 200,000 acres in barley this year, twice the normal acreage. Grain crops are heavy on both the high and low lands.

Grain harvesting commenced last week at various points in the central part of the State.

Citrus, Olive, and Grape Notes.

At the same time we hear that the last of the valencias are being shipped from Palermo and the first of the valencias are being shipped from Tulare county in car lots. A daily orange train is iced at Fresno and routed via Truckee to take advantage of the cooler northern weather. Estimates are that 700 to 900 carloads of this variety will be shipped from central California this season.

Since November, when the citrus season begins, over 22,000 cars of oranges and 1200 of lemons have been shipped East. This is more than twice as much citrus shipment as last year at this time; about 3500 cars more than at the same date two years ago; but only half as many lemons as two years ago.

Green orange shipments in the early season cut down Eastern purchases, which had to be drawn back to California fruit by offering the good later product at prices but little better than ruinous. The prices are much better now.

Shipment of immature fruit is to be discouraged from certain parts of Tulare county by the voluntary organization of growers who will have inspectors in the orchards to designate properly ripened fruit.

Accrued interest on the refund made by the railroads to lemon growers of Corona alone amounts to \$8000.

In the Bangor district of Butte county many acres of olives, oranges, and grapefruit are still being planted.

A new olive plant is to be ready for the California Ripe Olive Co., of Oroville, at the beginning of the packing season.

Fresno county green-fruit growers are being enthused by a series of mass meetings at which the purposes and possibilities of the Green Fruit Association are discussed, and quite generally endorsed. This association will look after the marketing of its members' fruits, after the system of the Associated Raisin Co. Clovis growers signed up over 400 acres. Neighboring counties will be organized at an early date.

It is reported that irresponsible agents have been trying to contract green fruit for the old-line shippers in the San Joaquin valley.

Deciduous Marketing.

At the same time that we hear of the practical failure of Royal Anne cherries in Santa Clara county, comes the report of the best ever from Butte county. The half crop of Tartarians amounted to about 16,000 pounds on the Bidwell ranch, and 40,000 pounds of Royal Annes are expected.

The California Fruit Distributors sold the first straight car of over 2000 boxes of cherries in New York on May 11 at an average of \$2.40 per box.

The first straight car of cherries from Santa Clara valley left May 10, the earliest in 15 years.

A small car of Suisun cherries sold in Chicago for \$2731.

Fruit and vegetables for Nevada points from Placer county will have special refrigeration service after June 1.

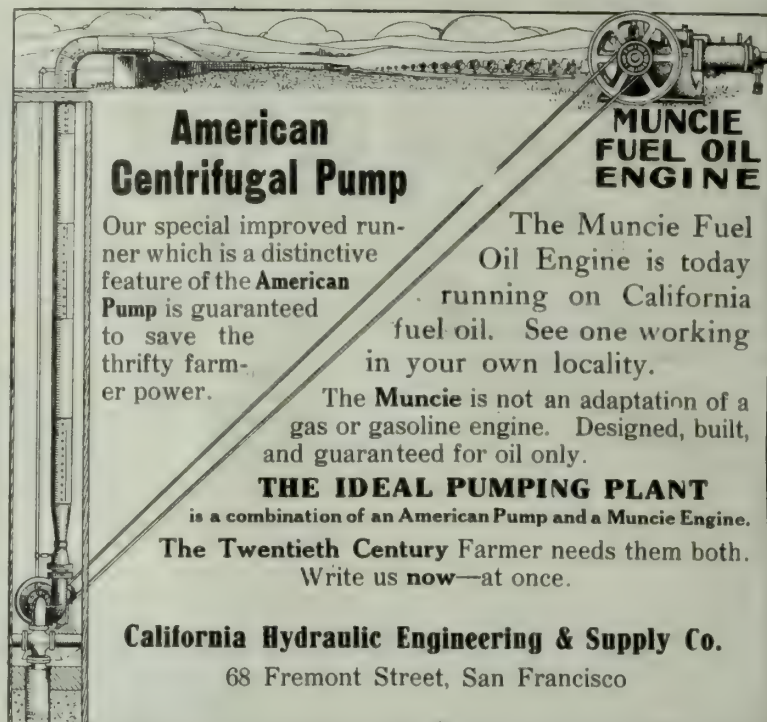
Imports of apples to the British

Isles in January and February were 50,000,000 pounds, having been 86,000,000 pounds average for the same periods in 1912 and 1913.

Shipments of apricots, peaches,

plums, and cherries were sent from Vacaville last week. Placer county also shipped a box of peaches.

The first peaches and apricots left San Joaquin valley last week.



American Centrifugal Pump

Our special improved runner which is a distinctive feature of the American Pump is guaranteed to save the thrifty farmer power.

MUNCIE FUEL OIL ENGINE

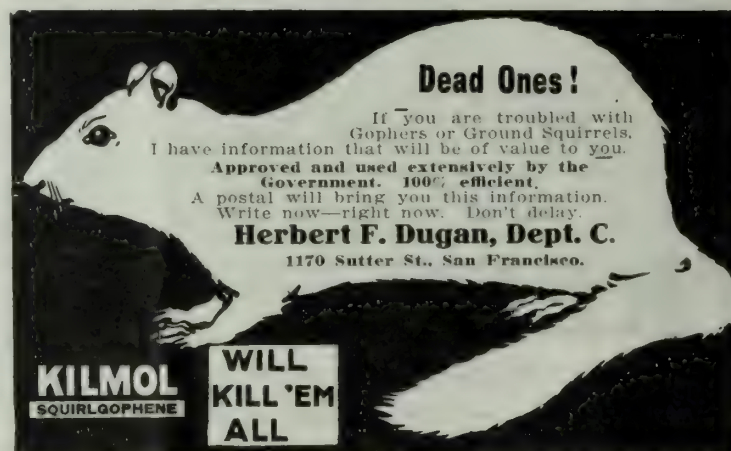
The Muncie Fuel Oil Engine is today running on California fuel oil. See one working in your own locality.

The Muncie is not an adaptation of a gas or gasoline engine. Designed, built, and guaranteed for oil only.

THE IDEAL PUMPING PLANT
is a combination of an American Pump and a Muncie Engine.

The Twentieth Century Farmer needs them both.
Write us now—at once.

California Hydraulic Engineering & Supply Co.
68 Fremont Street, San Francisco



Dead Ones!

If you are troubled with Gophers or Ground Squirrels, I have information that will be of value to you.

Approved and used extensively by the Government. 100% efficient.

A postal will bring you this information. Write now—right now. Don't delay.

Herbert F. Dugan, Dept. C.
1170 Sutter St., San Francisco.

KILMOL SQUIRLOPHONE

WILL KILL 'EM ALL

Pomona Deep Well Pumps

are admitted by experts to be the---

BEST

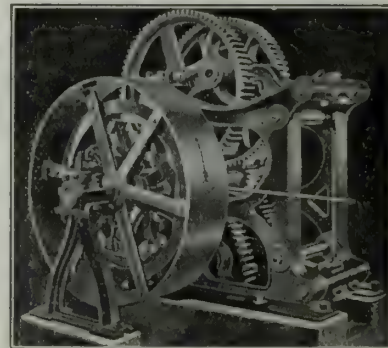
We have twelve successful years of manufacture and hundreds of satisfied users to point to as conclusive proof.

POMONA DEEP WELL PUMPS

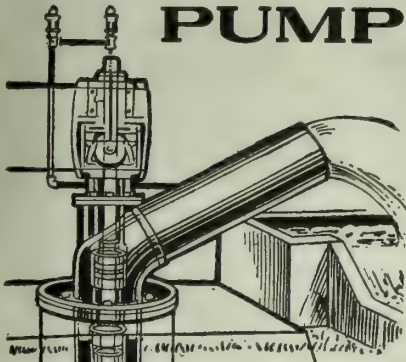
If you can't call and see us—then write stating your problem fully, with depth of well, etc. Don't wait until you actually need the water—get in touch with us now.

Pomona Mfg. Co., Pomona, Cal.

We also make a complete line of gates and valves for cement pipe irrigation. Our special valve catalogue "P" will be sent free to any address upon request.



The LAYNE & BOWLER PUMP



Real Pumping Plant Efficiency

Few irrigators had any idea what real efficiency was until they had installed the Layne & Bowler pump. It is the pump of the century, built to stand constant wear, to work perfectly, and to give absolute satisfaction under any or all conditions. Every Layne & Bowler pump is constructed to meet the particular requirements of the well it is intended for, and is absolutely guaranteed.

Be insured against crop failures by installing this pump.

LAYNE Patent Well Screen

This screen increases well production, as it has a far greater inlet than ordinary screens. Sand troubles are positively eliminated and the well is made more durable. This screen has achieved wonderful success wherever installed.

Write today for illustrated Catalog No. 25. There may be something in it you don't know about irrigation. It's free for the asking.

LAYNE & BOWLER CORPORATION

900-910 Santa Fe Ave.,
Los Angeles, Cal.
SAN FRANCISCO OFFICE,
508 Kohl Bldg.

Vegetables.

Iced cars were furnished the Imperial valley cantaloupe shippers last week.

The Lima Bean Growers' Association recently took the final steps in reorganizing from a stock company into a non-profit co-operative marketing organization.

This year's price for asparagus is used as a basis for 10-year contracts on a large delta acreage. Green varieties were priced at 2½c; white at 3 to 3½ cents.

Delta celery prospects are the best for years.

The bean acreage in San Joaquin county is heavy, and prices are expected to be good, especially for white beans, as with the opening of the Panama canal it will be possible to make big inroads on the Michigan bean growers' markets in the East, where it has been impossible to ship the California product before, on account of the difference in freight rates. The potato area is the normal 35,000 acres and prospects are fine. The red onion crop is just being harvested and is finding a ready market at extra good prices.

Practice Work for Students.

A bunch of University students in pomology left Berkeley last Monday on a six weeks' trip through San Jose, Watsonville, Fresno, Davis (for the Convention), and north through Chico and the Sacramento valley to interview fruit growers and get first-hand knowledge of California conditions. For this they are to be credited with 6 of the 120 units that are required to complete the course in agriculture. Some of those specializing in animal husbandry will receive 6 units for working this summer, on selected ranches, at \$30 per month and board. The citriculture traveling course, required of those majoring in that subject, takes its students north first, returning to the horticultural convention, and then south. The other departments of the Agricultural College also have student trips or work for the summer for which university credits will be given.

Raisin Butter.

If raisin butter proves as popular as peanut butter, raisin growers will have another staple outlet for their grapes. Grangeville, Kings county, has a factory recently completed, from which shipments have already been made to Los Angeles and Oregon. Experimental work for some time past has shown the keeping qualities of the new product, which is put up without preservatives and sells in bulk at 20c per pound or in 8-ounce glasses at 15c. Raisin catsup and raisin fruitcake are also being made here. Development of fruit by-products will have an important influence on ability of growers to stay in the game when Eastern markets are low.

Exhibition Notes.

The California Apple Show, heretofore held in Watsonville, will this year be given in San Francisco, and in 1915 at the World's Fair grounds.

Motion-pictures of the thinning of 1500 peaches from a tree in Fresno county will be shown at the Exposition. Fruit-picking from the same tree will also be portrayed.

CLASSIFIED ADVERTISEMENTS

Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

TREES AND NURSERY STOCK.

Three years ago we set out 150 cactus leaves in order to test this widely heralded agricultural introduction. The results were so pleasing that in 1912 we secured direct from Luther Burbank 1100 additional leaves, all of which proved prolific. We have planted our acreage and now offer for sale a surplus of 5000 leaves at reasonable rates. El Dorado Cactus Nurseries, Cupertino, Cal.

FOR SALE—Peach, apricot, plum, prune, fig, apple, pear, and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants; elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRINK & KOHMAN, Nurserymen, Box 1212, Fresno, Cal.

BURBANK'S SPINELESS CACTUS. We are offering for immediate delivery the improved forage and fruiting varieties Burbank cactus. We guarantee all plants true to name. A liberal discount on orders for 1000 leaves. Send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or Jesse I. Jewell, Mgr., Santa Rosa, Cal.

PROFICHI FIGS.

Will supply 150,000, 1914 crop, mostly MELCOS and ROEDING No. 3. Orders filed now will receive prompt attention when ripe. THOMAS H. LYNCH, Box 21, R. 8, Fresno.

SPINELESS CACTUS—Six fruiting and six forage varieties (12 plants) for \$5. All Burbank productions, introduced 1911-1912. Special prices on lot of 100 to 1000 slabs. J. T. GREEN, Box 63, Morganhill, Cal.

AIM—IMPROVEMENT OF TREE TYPE—Pedigreed Citrus Nurseries. Selected stock. Sour seed bed stock up to 3 ft. tall. F. H. Nusbickel, Glendora, Cal. Phone 388.

BERRY PLANTS AND RHUBARB—Everything in small plants for garden and orchard. Send today for price list. Louis F. Scribner, Pasadena, Cal. R.F.D.

AVOCADOS—Seedlings, 3 to 8 ft. 60c to \$1. Budded trees, \$3. All field grown. Discount on quantities. Magnolia Nursery, Whittier.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

EXPERT BUDDING of large trees. STEPHEN J. HESLOP, Delano, Cal.

FOR SALE OR EXCHANGE.

STEAM HARVESTING OUTFIT FOR SALE—BEST ENGINE, HOUSER-HAINES HARVESTER (SEPARATOR NEW), OIL WAGON, WATER WAGON, COOK HOUSE, TOOLS, ETC., everything complete for the field. ALL IN FINEST CONDITION and offered at a BIG BARGAIN. Terms. Entire outfit can be seen in Stockton. STOCKTON ICE & FUEL CO., 33 South Eldorado St., Stockton, Cal. PHONE 47.

FOR SALE—Portable pumping plant. International 8 H.P. gas engine and 5-inch pump, mounted on wagon, necessary pipe; all practically new; cost \$600; price \$300. M. P. STEIN & CO. Stockton, Cal. Phone, 421.

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SCOTCH COLLIES. The old reliable. They are stock drivers, watchdogs, renowned for their usefulness and beauty. Have pups, grown dogs, bitches open and bred. Prices \$10 and up. These are the premier collie kennels of the Pacific Coast. Browndale Collie Kennels, Easton, San Mateo county, Cal.

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Fifth and Cypress Sts., Oakland, Cal.

LAND FOR SALE.

VICTORIA, AUSTRALIA, WANTS settlers.—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California; no extreme heat or cold. Small deposit and 31½ years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairying, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Box W, 687 Market St., San Francisco.

18½ ACRES, 2nd year's alfalfa; family orchard; 10 acres planted to young walnuts, peaches and pears. Small house. Well 80 ft. deep. \$2500 cash. Price \$8000. W. H. KRESS, R. 1, Box 21B, Patterson.

5 ACRES on corner, now in grain; 5-room house, barn, chicken houses, etc.; fenced, family orchard. \$4500, \$1500 cash. ½ mile from Livermore. Mayflower Farm, Livermore.

BUY FROM OWNER—Two beautiful orchard homes adjoining Sunnyvale, Santa Clara county, Box 6, Sunnyvale.

10 ACRES, 2d year alfalfa, 9¼ acres; combination chicken houses; house 4 rooms, sleeping porches; family fruit trees; 20 tons alfalfa first cutting. Price \$6000, \$3850 cash, balance 10 years, 6%. J. NELSON, Box 152, Patterson.

SEVEN ACRES filled with nursery stock; water, improvements. Inquire for particulars, E. LEONHART, Fair Oaks, Cal.

10 ACRES ALFALFA, family orchard; barn, well and tank; small house, new buildings; close to town. Price \$4000. H. L. CRIPE, Patterson, Cal.

9.98 ACRES IN ALFALFA, small orchard, chicken houses, 5-room cottage; 7 tons hay included. \$4300, terms. J. H. DURBIN, Patterson, Cal.

60 ACRES YOUNG PEACHES, 20 acres figs; 12 miles from Dinuba; good roads. Price \$10,500, \$3500 cash. Mrs. F. E. BRENNAN, 138 Courtland Ave., San Francisco.

FIVE ACRES, 3¼ in second year alfalfa, cuts 4 tons per acre; 15 laying hens and 100 young chicks. Price \$1100, \$300 cash, balance 10 years at 6%. G. E. RAYNER, R. 1, Box 36, Patterson, Cal.

WANTED.

RANCH SUPERINTENDENT'S POSITION; married, age 36; country raised; good general experience in farming and handling and drying fruit; some theoretical knowledge; for last several years engaged as foreman in building construction in San Francisco; understands modern accounting and cost data thoroughly; can do two things well: handle men and apply modern business methods to ranching; interested in Burbank cactus culture; best of health; fair salary. Box 94, Pacific Rural Press.

POSITION WANTED on fruit ranch by man of good education and address; age 28; single; is expert horticulturist; small experience with ranch work. Reliable, hard worker, used to handling men. References. Would accept moderate salary if pleasant surroundings. Address Box 215, San Mateo, Cal.

WANT TO LEASE two hundred to five hundred acres two-year-old stand alfalfa within reasonable distance from San Francisco or Fresno, with sufficient supply of good water; can use barn and bunkhouse only if erected, otherwise not necessary. Address Box 101, Pacific Rural Press.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Position as manager of a large orchard. Best references and many years experience. Address Box 19, Pacific Rural Press.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

"WE PAY THE FREIGHT"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. The Direct Supply Co. has combined with us. SMITH'S CASH STORE, 106 Clay St., San Francisco.

SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send your inquiry SHEETER PIPE WORKS, 306-8 Howard St., San Francisco.

Constructive Agriculture—No. 20.

PRESENT DAY PIONEERING.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

'Twas a mortgaged Pennsylvania farm, a college education in civil and mining engineering, the hard times of 1907, and a lay-off from his work that led G. E. Feters through many tribulations to his present happy home in a cottage built by himself and his wife's father, overlooking hundreds of acres in the four-year-old Carmichael colony in Sacramento county.

With \$25 and a ticket to Denver, Mr. Feters said farewell to his wife and babe of three months, and soon was applying for manual labor in a Colorado mine where men had been laid off for hard times. His obstinate refusal to take the mine bookkeeper's "No" for an answer, and his readiness to muck ore in his good clothes in a gang of Italians, saved him from the need of "beating" the trains back to Pennsylvania. Three years later he was holding his second responsible position, at a second mine, when literature, and perhaps a visit, led him to buy 12¼ acres of raw land for \$1850 in the Carmichael colony, to be paid for in installments.

His wife had helped him save a little, the mortgaged farm had been sold, and added a little. With that they came to make a new home, in July after the colony was opened in February, 1910.

His religion and mining experience, combined with the hardpan which runs 18 inches thick from four to seven feet under the soil of the country, gave Mr. Feters his first opportunity to make a living while waiting for his fruit to grow.

Other people were having orchards planted; he was on the ground; many of the other owners were not. He

knew dynamite and he knew that hardpan prevents drainage, and that lack of drainage is fatal to trees.

So he took contracts to blast the holes through hardpan and to plant the trees for non-residents. He charged 30 cents per hole to be bored 4 feet deep and blasted with a pound of 25% dynamite. In many cases the hardpan was over 4 feet deep and he bored deeper free of charge. The boring is done with wood augers, which he himself always keeps in good cutting condition.

"I expect to live here and to point with pride in a few years to the trees I have planted. There would not be much pride in pointing to trees planted over unbroken hardpan." Many contracts he sought were lost because other men would underbid him and use less dynamite and less depth when they were not watched.

But his thorough work, always done up to contract, soon had him so busy that men had to be hired to help. He now has eight or ten men working for him all the time, and he says to them, not "Go to work," but "Come," and he shows them how. By this plan they do 50% more work than often happens when the employer drives up in an auto, gives orders to a foreman in charge, and drives away.

In staking out the holes for trees, there were difficulties. Pieces of solder were put on a smooth wire at proper distances, but in dragging it over the ground, sometimes a solder would slip a foot and the tree would be planted out of line before the slip was discovered. So he fixed up an adjustable line as described in the article on olive planting.

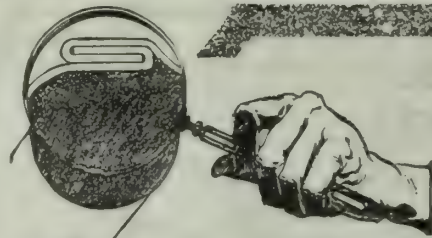
Using so much dynamite, he took the agency for it; and the commissions have helped pay for the home.

"I've undertaken most everything there was around here to make a little money."

Planting so many trees, people naturally asked him where to get them, and so he made enough selling Kirkman's nursery trees last year to buy 400 olive trees, which were set this winter on his own place in addition to many set out before. There are almond and peach trees about the house that have made a wonderful growth in the two and three years since they were planted.

The gently rolling landscape is studded with the grand old California oaks, and where these have been in the way of the orchards, Mr. Feters has grubbed and blasted them out, getting the wood for the work, a handsome profit. The roots of these trees must be taken out two or three feet deep because the fungus which rots them often kills all kinds of fruit trees.

The Fair Oaks irrigation system is extended to the Carmichael colony, where all water is distributed through redwood pipes bound by spiral wire. One of the contracts of this busy newcomer is to care for these pipes, which are supposed to water the 2000 acres of the colony with 2400 gallons per acre per day. All complaints of short water, bursted pipes, etc., must be cared for. On election day, he and the bank cashier get \$10 each for counting the ballots, which they do systematically in time to loaf around



Lock Seamed

No Solder
No Rivets

Ames Irvin Lock Seam Irrigation Pipe won first prizes against all competitors at the Sacramento State Fair in 1913 and at Fresno and San Jose County Fairs in 1912 because

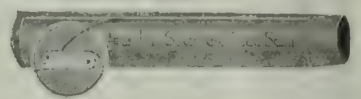
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- is made without solder or rivets. Only the sheet of steel itself is used.
- the sheets are edged, locked together and set down under 3500 pounds pressure.
- the union of metal is complete. It can't leak or rust. It is simple, solid and strong.

Send for booklet RP. Find out all you can about irrigation pipe before you buy. Your judgment will tell you which will stand the roughest handling. Send for it today.

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SURFACE IRRIGATION PIPE

GALVANIZED SHEET IRON
4—5—6 inches. 10-ft. lengths

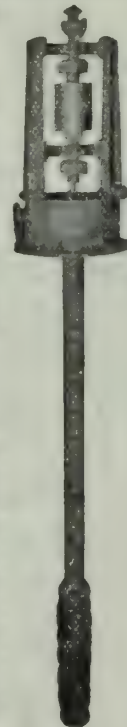
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Krogh Deep Well Turbine Pumps



For bored or drilled wells from 10 inch inside diameter up; and for capacities of 250 gallons per minute up to 3000 gallons per minute. Built for pumping from any depth to and including 250 feet. They are absolutely water balanced and are self aligning. More water can be obtained from such wells than with any other type. Built in belted or direct motor driven types. If interested, write for Bulletin.

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FAST ELECTRIC TRAINS

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SAN FRANCISCO, OAKLAND,
ANTIOCH & EASTERN RY.

"Associated" Gas Engines

1½ H.P. \$56.00
Our Price.

One of these sturdy little engines will save time, labor, trouble, money. You can put it to a thousand tasks.

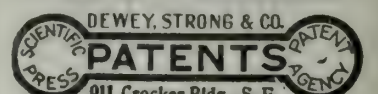
Dow Centrifugal Pumps—We will sell you these well known pumps at \$18 up.

Mudwell Surface Pipe for irrigation use. Six-inch pipe at \$20.80 per hundred feet.

We will Save You 10% on All Hardware.

HOME UNION

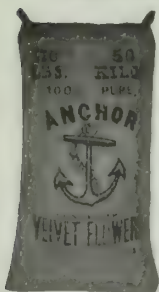
51 Market St. San Jose, Cal.



911 Crocker Bldg., S. F.
Circular containing 100 mechanical
movements mailed free.

PATRONIZE HOME INDUSTRY

Fleur de Soufre, Anchor Brand, and
Eagle Brand Flowers of



SULPHUR

Packed in barrels and double sacks are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

SAN FRANCISCO
SULPHUR CO.
424 California St.
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SECOND HAND PIPE

Very best quality of selected second-hand water pipe and standard screw casing pipe. For quality and low price you make no mistake when buying water pipe of the Weissbaum kind. Largest pipe works in the west.

WEISSBAUM PIPE WORKS,
160 Eleventh St., San Francisco.

FLORIDA SOUR ORANGE SEED BED STOCK.

Grown without shade; they transplant much more successfully than shade-grown trees. We have the largest and best stock of seedlings as well as a good stock of Navels, Valencia, Eureka Lemons, and M. S. Pomelos. Send in your orders; now is the time to plant.

SOUTHLAND NURSERIES,
F. H. DISBROW, Propr.,
2141 E. Colorado St., Pasadena, Cal.

BURBANK SPINELESS CACTUS
Guaranteed Forage and Fruiting Varieties. Lowest Prices.
CO-OPERATIVE CACTUS FARM,
Kenwood, Sonoma Co., Cal.

the other polling places where less system prevails. On the school board he helped organize a high school with a three-year course, and finally arranged for a Union High School building for the several colonies of that section. The Chamber of Commerce made him its secretary, and he has become the humane officer of that section. With all this, he finds time to be a trustee of the church from which his home is two or three miles.

For some time Mr. Fetters cared for many of the orchards he planted, but the work became too much, and now they are sublet to another man, although he will continue to care for a few which are particularly interesting.

And now, after so few years, the homey little cottage contains five healthy, happy people who would not go back to mining or city life on any terms. It is surrounded by a young orchard, largely of olives, which will be bearing heavy crops when Mr. Fetters is too old to work hard. It overlooks an orange grove which will scent the air for two months in springtime and will present in autumn a solid block of the most ornamental trees grown. Roses already climb over the porch, and flowers bloom in the front yard. A Jersey cow makes butter to use in cooking, and the richest, freshest, purest milk to make the children grow. Eggs will be supplied in their back yard the year around. The most desirable, industrious neighbors will be theirs. They are pioneers in a new country of great promise.

This article is not written to boost Mr. Fetters. He asked that his name be withheld, and only with reluctance consented to the incidental mention of himself. It is written as one instance of what hundreds—nay, thousands—of men can do in California; they are doing it now, and there is an empire of room for more.

GAINS IN STORING GRAINS.

Contrary to general belief there is a gain of from 2½ to 4½%, instead of a loss, in the weight of grain during the fall after harvest, according to a bulletin just issued by the Utah Agricultural College.

Before this experiment farmers in that State were almost unanimous in their belief that there would be a loss during storage of from 5 to 20%, and many were willing to sell at a considerably lower price at harvest than later, even though storage cost them nothing. The idea that there might be any increase in weight after harvest met with little favor.

Wheat and oats were used in the experiment which was started in August, 1911 and continued for two years. Each bag held about 130 pounds of wheat and a little less of oats, being stored in a grain room, of the barn at the college. The bags were weighed once a month, nine of them being used, which were filled with the following grains: Two bags of Gold Coin wheat, raised on a dry farm and harvested with a combined harvester, on August 17, 1911; two bags of Lofthouse wheat from a dry farm, cut with a header and stacked ten days before threshing, August 17, 1911; one bag Danish oats, raised under irrigation, cut, bound and allowed to stand in shock for a week before being threshed, August 26, 1911; one sack of Red Dust Proof oats, raised and harvested the same as Danish oats, also two bags of New Zealand

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THE SELF-FEEDER is a patented attachment obtainable on this press only and SAVES THE WAGES OF A MAN ON THE FEED TABLE, eliminating all danger at that point and INCREASING THE CAPACITY OF THE BALER 25% to 50% by increasing the speed of its operation. THIS PRESS WITHOUT THIS PATENTED ATTACHMENT HAS ALL THE FEATURES OF OTHER SO-CALLED SELF-FEED PRESSES.

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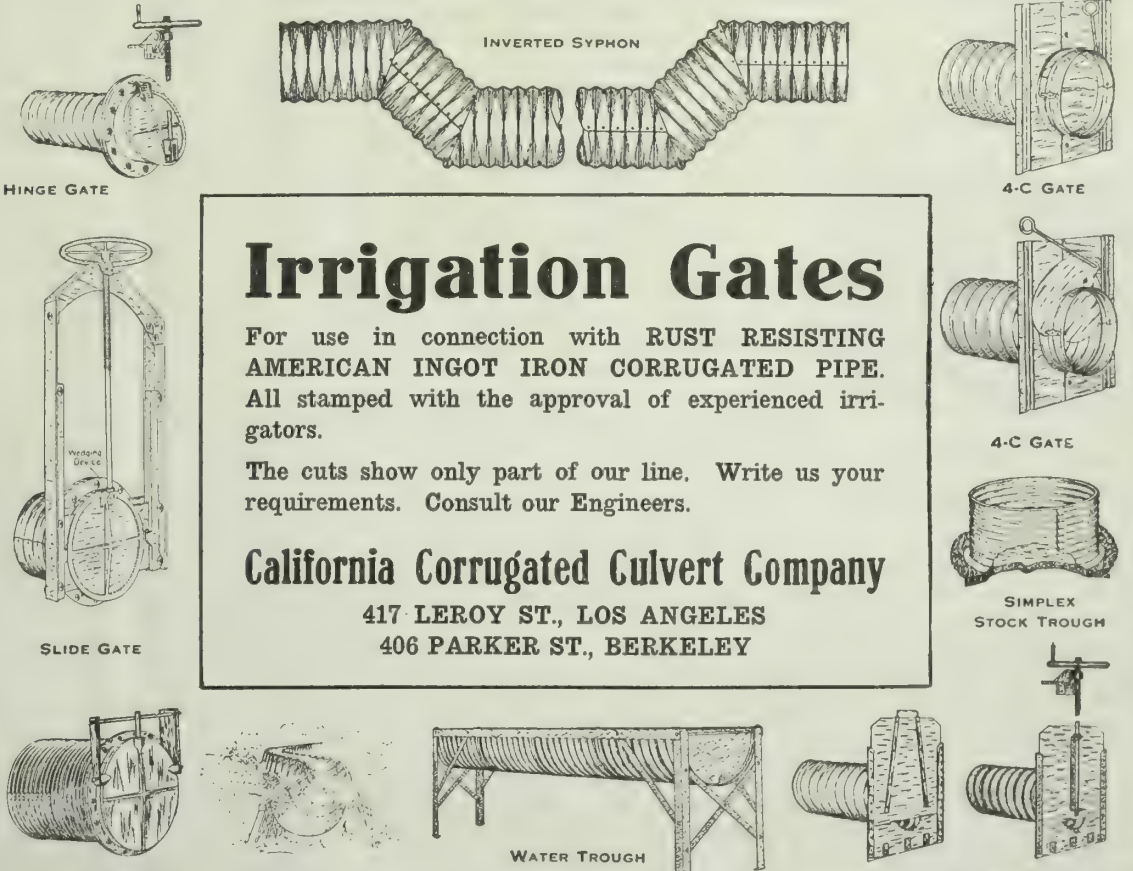
Irrigation Gates

For use in connection with RUST RESISTING AMERICAN INGOT IRON CORRUGATED PIPE. All stamped with the approval of experienced irrigators.

The cuts show only part of our line. Write us your requirements. Consult our Engineers.

California Corrugated Culvert Company

417 LEROY ST., LOS ANGELES
406 PARKER ST., BERKELEY



wheat grown and harvested as above mentioned. The other bag was Turkey Red wheat from a dry farm, manner of harvesting unknown.

In every case there was a gradual increase in weight during the fall and winter months, until a total gain of from 3 until nearly 5% of the original weight had been made. In the spring, about April, there began to be a loss, which continued through the summer and until fall when the weight started to increase again.

The results do not show any consistent difference, due to methods of harvesting, whether it was done with a combined harvester and threshed at

once, with the header and stacked ten days before threshing, or cut, bound and left standing in the shock ten days before threshing. Neither was there found on the average any material difference in the grain, whether raised under irrigation or dry farming conditions.

It is thought probable that the stage of maturity and dryness, at harvest, are the chief factors that determine changes in weight, rather than the variety, the method of raising, or the method of harvesting. In every case there was a gain of weight during the winter and a loss during the summer, but the grain weighed less at thresh-

REDWOOD TANKS
I sell to the consumer Box shooks and Boxes, Trays, Lumber, Mill-work, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

R. F. WILSON, Stockton, California.

ing than at any other time.

While these experiments were carried on in Utah, and may therefore not apply to all California conditions, we judge that similar experiments in most of our grain growing sections of this State, would reveal the same increase of weights, rather than loss as is usually believed.

With the Live Stock Men.

James McCord, of Hanford, Kings county, reports that he recently shipped a carload of mules, containing one jack and the balance jennets, to J. W. Jennings, manager of the Jones ranch near Tehachapi, Kern county. He has shipped a total of four jacks during the past month, one of which was sent to a breeder in Kansas.

About 250 cows were signed up by Assistant Farm Adviser Searles, of Yolo county, for the organizing of a cow-testing association at that place, May 15. It is thought that a sufficient number will be entered during the next two weeks to insure the success of the association.

P. H. Davis, president of the California Holstein Breeders' Association, states in a communication to this office that there will be a meeting held of that association on June 15, at Corcoran, Kings county, at which time George Smith will give a banquet in connection with his sale of pure-bred Holstein cattle. Speakers will be provided, and it is thought that a good attendance will result.

Harry Clark, manager of the Black Hawk Stock Ranch at Burlingame, writes that he has just sold, through his advertisement in the RURAL PRESS, the stallion Blackhawk Merryboy to the Holcomb Estate Co. of Reno, Nev.

An increase in the price paid by creameries in Tulare county is noted in the prices paid for the month of April, over those of March, the April prices being 28 to 29c per pound for butter-fat.

What is said to be the best finished bunch of steers that has ever been shipped from Porterville left there for San Francisco one day last week. There were 300 in the bunch, having been fattened on grass by Will and Fred Gill. They were three-year-olds and averaged 1420 pounds, bringing the owners in the neighborhood of \$30,000.

Several cases of hog cholera have been noted in Yolo county, during the past week, and many farmers of that section are vaccinating as a result. Much good work along this line is being done by the farm adviser, who is urging all farmers to take this precaution against the dreaded disease.

The Crocker-Huffman Co., of Merced, received last week a shipment of 1326 head of yearling beef cattle, which were shipped from Texas. They were taken to the Bellevue Ranch, where they will be branded and made ready for the ranges.

W. J. Hackett, of Ceres, Stanislaus county, writes that he has nothing left in the way of registered Jersey bulls, except a few under nine months old.

Cattle receipts at the Portland Union Stock Yards for the week ending May 16 were less than for the week previous, the best hay-fed light steers selling for \$7.75, with the bulk of selling at \$7.35 and \$7.60. Choice cows and beef bulls, steady to firm, and very little butcher stock offered. Hog prices were 15 to 20c lower for the week, tops going at \$8.30 to \$8.40.

Although there was a big run of mutton and lambs for the week, there was only a fair demand for mutton. Prices for best yearling wethers were \$5 to \$5.25; best old wethers, \$4.75 to \$5; best ewes, \$4 to \$4.25; best yearling lambs, \$5 to \$6.25; and spring lambs, \$7 to \$7.25.

A great many cases of glanders are being reported in Butte county, and a report from there states that State Veterinarian Keene is afraid that the disease will spread to all parts of the county if precautionary methods are not taken at once.

Officers and patrolmen were elected at the second annual meeting of the Stockmen's Protective Association held at Livermore last week.

More than \$75,000 was paid out to the dairymen by the creameries of Fresno last week. The Danish creamery paid 30c per pound for butter-fat, which is an increase over the month previous.

PUREBRED SALES.

Following are the sales of purebred animals reported to us since our last issue containing this department:

POLAND CHINA SWINE.

Chas. N. Odell, Modesto, sold to Harold Hoover, Modesto, one boar; to K. M. McClure, Modesto, one boar; to L. M. Miller, Modesto, one boar; to G. T. Allen, Snelling, one boar; to R. J. Miller, Lathrop, three sows; to A. T. Lewis, Riverdale, two sows.

DUROC JERSEY SWINE.

Ed. E. Johnson, Turlock, sold to Grother Bros., Cumming, one boar; to Wm. Fales, Two Rivers, one boar; to H. Vosti, Hollister, one boar; to H. E. Hughes, Taylorville, one boar; to Wm. Hartle, Bakersfield, one boar and a bred gilt; to F. Coppins, Junction City, two gilts and one boar; to G. E. Ladd, Stockton, one boar; to Barker and Stone, Cordelia, three bred gilts; to D. L. Henley, Lemoore, one boar.

Linguist Bros., Turlock, sold to Las Ganado Dairy, Chowchilla, one boar; to J. T. Price, Sonora, two service boars; to N. C. Baily, Turlock, one service boar; to Luis Titus, Tracy, two service boars and two bred gilts; to Andrew Nelson, Keyes, one bred gilt; to James Caples, Elk Grove, two bred gilts; to A. L. Morarity, Patterson, two bred gilts; to C. E. Hoover, Turlock, one bred gilt; to C. E. Clark, Modesto, two bred gilts; to E. E. Johnson, Turlock, one service boar; to W. H. Dilse, Los Banos, two gilts; to O. E. Phillips, Los Banos, one bred gilt.

JERSEY CATTLE.

N. H. Locke Co., Lockeford, sold to L. R. Branstetter, Stockton, Sunshines Valet of Lockeford 115740; to H. M. Flesher, Valley Springs, Bonanza Boy.

W. J. Hackett, Ceres sold to J. Veerdman, Modesto, one bull; to W. O. Kaulkins, Ceres, one bull; to V. O. Morris, Ceres, one bull.

Royal Jersey Herd, Hanford, sold to J. A. Flory, Lemoore, Gerties Alto Lad 115773; to E. W. Sargent, Hanford, The Imp of Lockeford 107508; to C. F. Starr, Hanford, Fames Royal Rieter 113728; to C. G. McFarland, Tulare, Lattie's Glory Bird 243215; to C. F. Starr, Hanford, Evelyn of Venadera 169271.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

AYRSHIRE—THE PERFECT COW—Steybrae Ayrshires. Have for sale fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, address E. B. McFarland, San Mateo.

REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823—Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

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Working Into Purebred Stock.

[Written for the PACIFIC RURAL PRESS.]

One of the purebred dairy cattle and hog undertakings in Kern county, is known as the Lockhaven Stock Farm, about 10 miles from Bakersfield, and while it is still comparatively new, enough has seemingly been accomplished to demonstrate, that this county, like most of our other interior ones has advantages for this line of work, which are seldom equaled in other countries and never surpassed.

BERMUDA A FACTOR.—Like a large part of the land in this section, this ranch of over 600 acres was formerly used as pasture land for beef cattle, and although it had been partially seeded to alfalfa, the stand was badly run down and bermuda grass had taken its place. From this it will be seen that the work of the new owner, when development started some three years ago, was not only with the stock but with the land as well, for there are few other grasses that put up a better fight for their life than bermuda, although experience is proving on this ranch that alfalfa will crowd it out in good soil, if the hay is cut and no pasturing done.

The alfalfa grows so much faster than the bermuda, that the latter named does not get sufficient sunshine to grow and is eventually killed out, but where pasturing is done the stock eat the alfalfa down the same as bermuda allowing it an equal chance at the sun, with the result that the alfalfa suffers the most.

While the bermuda is an objection in some ways, it is also an asset in others for it furnishes an excellent feed on that part of the ranch which would otherwise lie idle until such time as leveling and checking can be done.

WHY BETTER STOCK.—As all of the land development was to be done for the sole purpose of raising more feed for dairy cows, hogs, and horses, it was decided that well bred stock could more profitably turn the extra feed into larger returns than would be possible with ordinary scrub stuff and for that reason herds of registered Yorkshire hogs and Holstein cattle were started and a registered Percheron stallion was purchased, to be used on heavy grade mares. Although it is pre-eminently a hog and dairy ranch, the management decided on raising horses, not only for the market, but for ranch work as well; for in developing so much land there is need for a lot of horsepower and the poor and undersized horse could not compete with the better bred one in such work. As a result of this practice all of the mare colts are being raised and the geldings sold to market buyers. At the time of our visit to the ranch there were 40 head of females, the older ones being used steadily except for periods of about one week before foaling and three weeks after. In fact that is all of the time that it lost in the mare's work and by using the good stallion and raising the fillies on the bermuda grass pasture they show a good profit in the ranch's operation.

With 200 acres of alfalfa, it is only natural that the dairy should receive the major part of the owner's attention, with hogs filling in as a profitable by-product. For that reason the 110 cows being milked are providing the largest part of the entire revenue. Most of these are grade Holsteins, al-

though a nice start with registered Holsteins has been made, the present herd containing 43 head of which some 24 are now being milked. The purebreds were purchased in the east with the exception of the herd sire, Sir Arcula Alcartra Korndyke, a three year old, that was purchased from the herd of A. W. Morris and Company of Woodland.

While a large part of the dairy herd are grades, boarders are not allowed to stay for any length of time, as milk testing and weighing has been practiced from the beginning. The result is that not only does the owner know which cows give him the best returns for one or two months, but he also knows whether they are persistent milkers, a thing that means more than many suppose, for it has usually been found on this ranch that the highest yearly producers are the ones that give around 30 pounds of milk daily and keep it up, rather than the cows that make a big showing on the milk sheets for a while and then fall down. Not only is this testing considered profitable in detecting the poor producers, but is also being used to advantage in selecting the heifers; for a cow that is not persistent is apt to transmit her faults to the heifer calf. For that reason a culling system is practiced in the young stock as well as for the older ones. It is satisfying to know that in this way the average production of the herd has been increased materially and will be still further increased by replacing the grades with young purebred heifers as fast as possible.

REASON FOR HOGS.—With so much good pasture and skim milk as the ranch affords, hogs are expected to play an important part, and in this respect the ranch differs from the ordinary undertaking, inasmuch as an entirely new breed to Californians is being raised. These are the Yorkshires, large and prolific white hogs that come from England. They are classed among the bacon breeds, not necessarily because they do not make good block hogs, which they do, but because they butcher out a larger percentage of bacon than most of our other breeds.

That they are prolific no one can doubt from the experience of the first year's operation on this ranch, where from the two sows that were used as a foundation, 61 pigs were farrowed; and what is more important, practically all were raised. Contrary to the general impression among hog raisers, the color of this breed is no fault, or at least it has not been found so on this ranch where the heat is about as extreme in the summer as can be found in the State, and where no special protection is given the hogs other than most farmers provide for other breeds.

It is the intention of the owner to make a specialty of this breed of hogs, for it has been found that they meet general approval at the fairs and other places where they have been seen. For that reason several sows are to be added to the herd this spring from the east.

Taken as a whole there are few ranches where all branches of better bred live stock receive more attention than this one, and it should be interesting to know that all of them are placed upon a strictly business basis where it is necessary for them to pay their way.

What Does a Silo Cost?

AN IDEAL GREEN FEED SILO will pay for itself the first year. That being the case, it will cost you nothing.

AS A MATTER OF FACT, THE COST of a silo is really a secondary consideration, because if you are keeping dairy cows or raising stock for the market, there is no investment which you can make which will pay you better returns than an **Ideal Green Feed Silo**.

A GOOD SILO IS A NECESSARY PART of the dairy equipment of every cow owner or stock raiser who wants to realize a reasonable profit from his herd, and if the matter of cost has been standing in your way, please remember that it is really not a question of whether you can afford to erect a silo, but whether you can afford to do without one.

IF YOU HAVE NO SILO, A LITTLE investigation will be sure to convince you that you ought to purchase one right away.

THE SHREWDEST AND BEST POSTED ranchers in Pacific Coast States are buying **Ideal Green Feed Silos**.

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PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT



VETERINARY QUERIES.

[Answered by Dr. E. J. CREELY, San Francisco Veterinary College.]

To the Editor: We have a mare eight years old with a colt a little over a year old. The colt was weaned about three months ago. Since the colt was taken away the mare has become very stiff in the shoulders. She is thin and looks twice her age. When standing she seems to be in pain and is continually shifting her weight from one forefoot to the other. She stands with her forelegs slanting from her body and her breast deeply sunken. We have been told that she is water foundered and sweened, but as she has been used very little during the winter and spring, we are unable to account for either of these diseases. We have been unable to locate a graduate veterinarian in this vicinity, so would like the advice of your veterinarian as to the treatment of the above symptoms.—M. F. K., Calistoga.

The mare has been foundered. She should be kept standing in a mud hole or running stream 5 or 6 hours daily and given a heaping tablespoon of saltpetre three times daily, in a bran mash. I am certain the disease is caused from indigestion. Her teeth should be filed and a good stomachic administered twice daily. Dr. E. Smart, Napa City, should be consulted, as founder of several days' standing without treatment may result in incurable chronic founder.

To the Editor: We have a fine young mare nine years old. The last few days she has become stiff in the legs. My husband says she has foundered, owing to a careless driver letting her drink freely while quite warm. He doubts if we can use her



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In 1912, its fourth year, sold 900
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IN MARCH 1914, SOLD OVER 1000

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WRITE THE AGENTS

C. F. DANIELLS & SON
MODESTO, CAL.

on the road again, although she can still do the farm work. Is there any cure?—L. W. A., Napa.

This is a case of founder. Founder is easily cured in four days if taken in time. When the stiffness is gone, great care must be taken that the shoe does not bear on the sole. Tar oakum and leather pads should be used on the front feet.

Seed alfalfa in Imperial county promises well, and a company is talked of to provide a warehouse and machinery for recleaning.

Big Success on Stanford Ranch.

[Written for the PACIFIC RURAL PRESS.]

Stanford University's Vina ranch of 59,000 acres bids fair to perpetuate the tradition of Western bigness.

A herd of 150 pure-bred Holstein cows, headed by three highly bred bulls, one of which weighed 2200 pounds before he was three years old, produces more than 300 pounds of butter fat per year per cow, or the cow is beefed. Heifers and all averaged 350 pounds for 1913. The heavy bull is King of the Pontiac's 14th, which has 13 world's record sisters and has 65% of the same blood as the present world's record cow, which produced 44.25 pounds butter in 7 days and 171.15 pounds in 30 days.

Beef cattle number 2000 Shorthorns headed by 80 breeding bulls. They

Four crews of 6 or 8 men each are busy cleaning and repairing irrigation ditches by machinery. One man with four of the sleek heavy horses, which are characteristic of the ranch and most of which were raised there, cleaned a half mile of dense and deeply grass grown ditch ten or twelve feet wide in three days with a disk, requiring no shovel work or other labor.

All tools from harvesters to shovels are bought and used in "batteries." Small tools are kept under 50 Yale padlocks that would necessitate the superintendents' carrying a pound or two of keys except that one master key fits them all.

This ranch of big things belongs to Stanford University, being a part of its endowment; and is run for profit to support the institution. But until about two years ago, its "profits" were

up some timbers that obstructed the ditch, and he wielded the ax and crowbar with such skill that the men were not offended and worked with greater efficiency. Quickly off to another bunch, keeping the multitudinous working gangs under his personal attention, he showed a man on the way how to fasten the tongue of a cultivator to the back of his wagon so it

wouldn't break in turning corners on the road to the field.

Thus a great machine working harmoniously under kindly, far seeing, businesslike superintendent W. G. Stimmel, has grown into a pillar of support for an institution which is developing young men and women into big leaders in their chosen lines of endeavor.



COMMERCIAL END OF THE VINA DAIRY.

The left-hand cow has had her second calf; the next two are old cows; the next two have had only their first calves. The white one in the middle made last year a gross earning of \$500, including her calf; she gave 13,608.8 pounds milk and 530.3 pounds butter-fat, being milked in the regular string, same treatment as all others. The record is made by weighing each milking and testing four consecutive milkings each month.

form the material for an experiment in baby beef, which will not be complete for a year or two, but which will be of vast importance to California if it proves as satisfactory as it now promises.

Sheep numbering 10,000 roamed the hill ranges last winter and produced 6000 lambs. All of these are now on Lassen county ranges for the summer.

A hundred white men and an unknown number of Chinese and Japanese do the work now; the number of men will be increased when haying begins in earnest. On the day of this writing, a "battery" of fourteen mowing machines is following the falling grass in miles of meadows. The sixteen hay racks are to be supplemented by a dozen new ones, now about completed, to haul 2000 tons to the barns. The rest of the hay will be stacked.

Over a hundred horses are at work now, after turning many to pasture with the nearly completed cultivation of 1600 acres of vineyard. Two 65-hp. Holt caterpillars and an ordinary big traction engine are a great saving of the horseflesh.

Dr. Dalziel, of San Francisco, is on the ranch spending six days doing nothing but clipping and filing the teeth of the horses.

One of the caterpillars walked away with 100 acres of peach trees this winter, a part of the process which has been going on for some years and will probably continue to the end. The fruit game is too hard to play with the available labor. This is largely of the men so common in California who, in the morning, take up their beds and walk.

quite regularly on the "red ink" side. During the past two years, however, a foundation has been laid for improvement, to such an extent that the ranch is now paying dividends and promises to do better in the future.

On the day of the writers visit the dairy foreman, G. L. Stearns, waxed rightly enthusiastic in showing his big Holstein beauties (and the little beauties too); explaining how the sale of grade cows began last November and now nothing but selected pure-breds remain. The reason was that there were many pure-breds in the herd and it was found as easy to raise pure-bred calves as grade calves which would sell for only \$150 or less. The pure-breds will sell up to \$500, the cost of raising having been practically the same. But that is another story.

All afternoon General Foreman J. S. Houseman caught time as we sped from one bunch of men to another behind a pair of foxy trotters, to tell facts of the bigness of the enterprise. "One of my big jobs," he said, "is to start men on their next piece of work."

With coat off he helped unload a disk from a wagon and put it together so it could be used to clean out an irrigation ditch. On the road again we passed a Chinese cook who told him he needed a nice hog. Off toward the hog farm this general foreman who knows by name every horse used on the place, told a man how to team up one just brought from the pasture, and meeting a man from the hog farm, told him just which hog to take to the cook. Again at the irrigation ditch he set a force of men at work tearing

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Breeder of

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50 COWS AVERAGE 717 POUNDS BUTTER.

This is the average of the 50 cows that have completed yearly semi-official tests to date, in our herd, and only 15 at mature age.

Did you ever consider what it would mean to place a young bull in your herd, bred in lines that are producing these results? It will mean increased production and value for every animal in the herd. He will produce the kind of stock that are in greatest demand at high prices.



INDIVIDUALITY, PRODUCTION, and TRANSMITTING ABILITY are essential in the choice of a herd bull. These are the qualifications of the young bulls that we offer as low as \$150.00.

Engage your calf for use next fall. Your inquiries will be given prompt attention. A. W. MORRIS & SONS CORPORATION. Holstein-Friesian Cattle. Woodland, Cal.



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INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
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16 HEAD OF TWO-YEAR-OLD HIGH-GRADE

Short-Horn Bulls

in splendid condition. Can be seen at Vina Ranch, Vina, Tehama county, Cal.

PRICE \$150 EACH, F.O.B. VINA.

Apply to W. G. STIMMEL, Superintendent, Vina, Cal.

Starting With Purebred Jerseys.

[Written for the PACIFIC RURAL PRESS.]

It is a well established fact that the successful breeder is, in most cases, the man who has grown into the business, rather than the man who has rushed into it, although there are exceptions to the rule. A very good example of this is shown in the success that C. G. McFarland has had with purebred Jersey cattle on his ranch near Tulare.

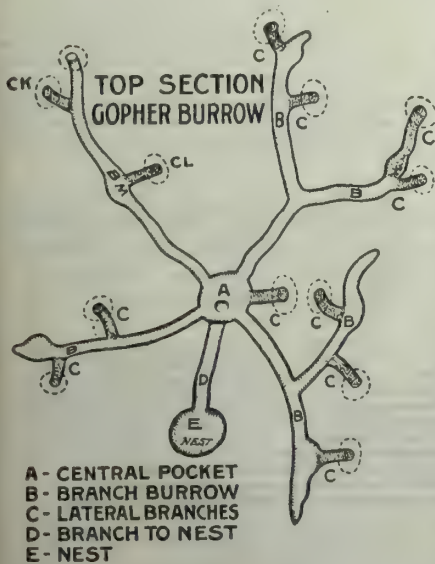
Starting at his present location about nine years ago with a grade herd of Jerseys and a purebred sire, it soon became evident to him, that better bred stock would bring in larger returns; and after he had become well established with his dairy, he purchased a few registered cows. Since that time the young purebred heifers have been used as fast as they came fresh to replace the grades, with the result that for several years nothing but registered stock has been handled.

During this time progressive methods have been employed, such as weighing and testing the milk, feeding silage and other feeds to secure a more evenly balanced ration than alfalfa alone would produce, and all of this time the returns from the dairy have been used in improving both the ranch and the buildings.

HABITS AND DESTRUCTION OF GOPHERS.

[Written for the PACIFIC RURAL PRESS.]

Killing gophers is apt to be a tiresome and discouraging job unless one knows their habits and their modes of self protection and for that reason we are showing a diagram of an ordinary gopher burrow. Gophers live in burrows situated from four to six or eight inches underneath the ground (B) running parallel to the earth. Branch burrows radiate in a more or less irregular manner from a central pocket (A). These branches (B) vary from twenty to fifty or more feet in length and have an average diameter of about 3 inches. Along the course of the branch burrows (B) are found small lateral branches (C) that are filled with earth that has been excavated from the burrows. The branch (D) which descends from the central



Among other improvements that have been acquired in recent years is electric power, which is put into use for almost all things. Installed originally to pump water for irrigation, it is now being used to separate the milk, running the vacuum pump for the milking machines, which have recently been installed. The same power is used for lighting the buildings and cooking the food.

Being a stockholder in the power company of that section, he receives his power somewhat cheaper than he would otherwise, but we were told that only four and one-fifths horsepower is contracted for, which costs for the year about \$200. As 28 acres of land are irrigated with this power, along with the other work before mentioned it will be seen that the comparative cost is very small.

According to the owner the purebred stock has paid for the ranch and improvements, and has increased in value to a large extent for continual selection has made it the leading Jersey herd in that part of the State.

IS SORGHUM SILAGE GOOD?

To the Editor: Will sorghum cane make good silage for milk production? My land will grow more sorghum to

pocket to a depth of three or four feet below the surface of the ground, terminates in an irregularly round cavity (E) in which the nest is located. Usually not more than two animals are found in a burrow except in the breeding season in the spring or after the young are born. Frequently there is only one.

The branch burrows may be located by drilling with a sharp pointed iron rod at any point from 8 inches to one foot on one side or the other of the small lateral filled branches (C). The general line of a branch burrow may be found by observing the location of the small lateral branches (C). To illustrate—to locate the burrow (B.M.) it is only necessary to note the location of lateral branches C.K. and C.L. The main burrow (B.M.) must necessarily be somewhere on a line between these two points.

As all of the branches (B) are connecting, it makes no difference in the result as to which branch is tapped. The freshest mounds of earth should be selected. As to killing them, when once located, operators in the field report that they secure an efficiency of from 95 to 100% by using poisonous gases, such as Kilmol and refined carbon bisulphide. As soon as the burrow is located, as above described, an iron rod is inserted and given a twist, to enlarge the opening. The gas is introduced into the hole immediately by the aid of a force pump and hose, sometimes called a "destructor." As soon as possible dirt is packed tightly around the hose and one and a half cups of the solution are poured into the vaporizing chamber. By giving the pump sixty single strokes the gas quickly fills the burrow and gets Mr. Gopher, before he has time to plug the hole.

If these directions are carefully followed there is little or no chance of failure, for as soon as the gopher inhales the deadly gases the escharotic chemicals in the solution set up an inflammatory action in the heart and lungs which is fatal.

the acre than any of the other corns. Egyptian wheat also grows very well. Will it make good silage? Would it be an improvement upon the silage to plant it thick and thus have it fine, or thinner and have it coarse?—J. I. B., Lemoore.

[When sorghum is properly cut and siloed it has been found to make good silage for dairy cows, although experience seems to show that Indian corn is better for a silo crop where it can be grown to advantage. We know of no experience with Egyptian wheat as a silo crop, but should say that it would give about the same results as sorghum. Regarding the thickness of the stand we would advise against too thick planting as that would have a tendency to lessen the amount of grain and therefore the feeding value. Will some of those who have had experience with these crops for siloing purposes kindly let us hear of their results for the past year?—EDITOR.]

QUICK PURE-BRED RETURNS.

[Written for the PACIFIC RURAL PRESS.]

The question is often raised as to what kind of stock a prospective breeder can get established in, the easiest, and the one that will produce a revenue the quickest.

With the exception of poultry, it is doubtful whether there is anything that will bring such quick returns as pure-bred hogs. Such is evidenced by the experience of Thomas G. Mackfessel, near Hardwick, Kings county, who is raising registered Berkshires.

A little less than two years ago, Mr. Mackfessel purchased one purebred sow and later a boar. Care was taken to select animals of good individuality and with good blood lines, the boar being purchased from the Grapewild herd at Mayhews, Sacramento county. This animal was sired by Star Value and was out of Royal Lady Lee, being a typey individual and a good sire, as is evidenced by his offspring.

Since that time the herd has been increased by the purchase of two other sows and a younger boar. At this time, through the keeping of all sow pigs, the herd has been built up to a point where breeding stock has been sold. Aside from extra care in the registered stock has been no more than if scrub stock were raised, the hogs being run on alfalfa and fed some grain and tankage.

With the growing demand for purebred hogs of all breeds, it is hard to see why more farmers do not take up the breeding of such stock. J. C. L.

RHOADES & RHOADES EXPERT LIVE STOCK AUCTIONEERS

Sales conducted in all parts of California and adjoining States. Write for dates and terms. Twenty-five years' experience.

1501-3-5 So. Main St., Los Angeles.

REGISTERED JACKS

12 head Jacks from 2 to 6 years old; all native sons and hardy as billy goats and about as active. Heavy bone and right every way; fully tested as breeders and sold with absolute guarantee. Come and see the stock. Will trade for young mules, horses or land.

JAS. W. McCORD, Hanford, Cal.
Residence, 508 N. Dooty St.
Phone 471-J.

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For — It is penetrat-
ing, and for all Old
Sore, Bruises, or
Wounds, Felons,
Exterior Cancors, Boils,
Corns and Bunions.
CAUSTIC BALSAM has
no equal as a
Liniment.

We would say to all
who buy it that it does
not contain a particle
of poisonous substance
and therefore no harm
can result from its ex-
ternal use. Persistent,
thorough use will cure
many old or chronic
ailments and it can be
used on any case that
requires an outward
application with
perfect safety.

A
Perfectly Safe
and
Reliable Remedy
for
Sore Throat
Chest Cold
Backache
Neuralgia
Sprains
Strains
Lumbago
Diphtheria
Sore Lungs
Rheumatism
and
all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES
Cornhill, Tex.—"One bottle Caustic Balsam did
my rheumatism more good than \$1.50 worth of
doctor's bills."
OTTO A. BEYER.
Price \$1.50 per bottle. Sold by Druggists, or sent
by express prepaid. Write for Booklet R.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Milk

Are you interested?

You should be, and if you are, we have something that you will need.

We manufacture a large part of our dairy supplies. That is one reason why we save you money. Below is a partial list of supplies—check the items of interest, and write us for prices and literature.

Milk Coolers. Milk Bottle Fillers.
Babcock Tester. Milk Bottle Washers.
Milking Machines. Washing Powder.
Gasoline Engines. Milk Cans.
Milk Caps. Milk Bottles.
Thermometers. Kow Kure.
Wood Sole Boots and Shoes.
Hay Balers. Tanks and Vats.
Churns. Brushes. Brooms.
Cream Separators. Vet. Instruments.
Speedometers for Cream Separators.

WHOLESALE AND RETAIL.

Guy F. Kelsey Co.

106 E 8th St., Los Angeles, Cal.

Quality Berkshires

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

Oak Grove Dairy Farm

Woodland, California

HOWARD CATTLE COMPANY

BREEDERS AND IMPORTERS OF
SHORT-HORN CATTLE.
55 New Montgomery Street,
San Francisco.

Blake, Moffitt & Towne

Dealers 37 FIRST ST., SAN FRANCISCO
in Blake, Moffitt & Towne, Los Angeles
PAPER Blake, McFall & Co., Portland, Ore.

Horse Breeders Perfect Organization.

[Written for the PACIFIC RURAL PRESS.]

The need for a draft-horse breeders' association, as suggested so many times in these columns during the past six months, was amply demonstrated by the large attendance of horse breeders who accepted the invitation of Prof. Gordon H. True to convene at the University Farm, at Davis, May 16, for the purpose of organizing such an association.

Perhaps no more enthusiastic meeting of live stock men has ever been held in the State than this one, and horsemen from all sections were present to show their appreciation of the effort being made and their desire to help the thing along with their financial and moral support.

The meeting was called to order by Professor True in the forenoon, after which interesting and instructive talks were made on the draft-horse situation by Henry Wheatley of Napa, James McNab of the firm of McNab & Smith of San Francisco, A. W. Foster of San Francisco, and I. D. Graham of the Panama-Pacific Exposition. Mr. Wheatley told of the needs of such an association from the breeder's standpoint, showing that there is much educational work in which the breeders as a whole should do, besides looking after the interests of breeders at the various fairs held in the State.

Mr. McNab gave his experience in the purchasing of heavy draft-horses for the city trucking business, and told of the difficulty his firm encounters in getting the right kind of heavy horses in this State. He pointed out that there has been only one year during the past six in which his firm has not been compelled to ship carloads of horses from the East. He also gave a very interesting history of the heavy horse in the State, saying in part that though farmers have increased the size of their horses through the use of larger stallions, the quality of bone, etc., has not improved in proportion; which is a serious drawback to the city horse buyer. Mr. Foster told of his experience in raising heavy horses, stating in part that the successful farmer of the future would be judged by the quality of the stock he kept, and emphasized the need of more and better horses, also the need of strong live stock associations. Mr. Graham told of the plans and objects of the Exposition in regard to the heavy horse and gave his opinion that a large number of good horses will be sold here at that time.

After some discussion, the constitution and by-laws were submitted and accepted, in which the following objects were set forth to promote the horse industry of the State: To hold an annual meeting for the discussion of matters of importance to the industry and adoption of measures for the furtherance of the business interests of the members; to bring into closer relationship the farmer, breeder, seller, and buyer; to encourage the organization of township and county horse breeding associations; to advance and introduce co-operation in horse buying, breeding, and selling; to disseminate educational matter looking to a better knowledge of the principles and practice of horse breeding, rearing, feeding, and management; to assist in the observation and enforce-

ment of existing legislation relating to ownership of stallions for public service, and to frame and urge the adoption of new legislation favorable to the interests of the horse-breeding industry; to assist farmers and breeders in obtaining pure-bred stallions and making sales; to encourage proper classification and premium lists at the State and county fairs; to discourage the use of unsound stallions and mares for breeding purposes; to encourage the use of pure-bred stallions and educate against the use of grades and cross-bred sires.

The constitution provides for a president, vice-president, and secretary-treasurer, and an executive committee to consist of three members and the above officers. The following officers were elected for the ensuing year: Henry Wheatley, president; William Bond, vice-president; J. I. Thompson, secretary-treasurer; and Dr. I. B. Daziel, Prof. Gordon H. True, and E. U. Westgate as the rest of the executive committee.

The annual dues were placed at \$5, and it is expected that a large membership will pay this comparatively reasonable amount.

The first meeting of the executive committee is to be held at San Francisco, May 30, at which time definite working plans will be discussed and a program for this year's work outlined. Meanwhile, the secretary has been instructed to communicate with all horse breeders in an effort further to increase the membership, and we would suggest that all interested in the heavy horse, send their application for membership to Prof. J. I. Thompson, Davis, California, at an early date.

"BLANKET" HERDING PROFITABLE.

Experiments in handling sheep under the "open" or "blanket" system of herding, made in eight National Forests during the season of 1913, show that the blanket system produces lambs approximately five pounds heavier and increases the carrying capacity of the ranges 10 to 25 per cent. It was found also that loss of sheep on heavily timbered ranges was less under the new method than the loss under the old system of close herding where the sheep are driven back to the same bedding-ground for several nights in succession.

The blanket system takes its name from the fact that the herder does not establish a permanent camp to which the sheep are driven every night, but packs his blankets with him and beds down the sheep wherever they happen to be when night overtakes them. During the day he moves about outside the band and looks for tracks to make sure that all his sheep are within the circle covered by him. Strays are rounded up and herded to the main band. Fuller use of the range is made, since little forage is destroyed by trampling, and the sheep fare better because they are constantly moving through new feed instead of returning to a permanent camp over areas already fed off.

Sheepmen formerly believed that the close-herding system was necessary to prevent sheep from straying, but the

Forest Service experiments show that this is not the case. One band in the Payette Forest in Idaho, which was never camped in the same place two nights and was herded in timber and

brush practically the entire summer, lost only four head; and in the majority of cases the loss under the new system was less than the loss under the system of close herding.

WHY NOT GET A GOOD SIRE AT BARGAIN COUNTER PRICES?

Geo. A. Smith's First Sale of Registered Holsteins, Corcoran, Cal., June 16, 1914

OFFERS YOU AN OPPORTUNITY to secure at BIDDERS' PRICES a BULL imported direct from the East to head your herd. All Ages from 4 Mos. to 4 Yrs. A Good Sire is Half the Herd, a poor one the whole herd. Consider these fashionably bred sires in your selections.

A son of the \$3000 sire, Sir Paul Beets Segis (5 A. R. O. Daughters), son of KING SEGIS (83 A. R. O. Daughters), the first bull to sell for \$10,000, sire of more junior two-year-old 20-lb. daughters than any other one sire and the greatest side of his generation. Dam Woodcrest Maid P. De Kol, 21.72 lbs. Butter in 7 days; age 3 yrs. A daughter of Maud D. K. Woodcrest Lad (14 A. R. O. Daughters). Granddaughter of Homestead G. De Kol S. Lad (99 A. R. O. Daughters), 10 of which have average yearly Butter Records of 833.37 lbs. each; his first 15 daughters, sold at auction, averaged over \$500 each. Her granddam, Rifton Lassie, is the dam of WOODCREST R. LASSIE, 908 lbs. Butter in 1 yr.—WORLD'S CHAMPION SENIOR 2-YEAR-OLD.

2 Sons of Judge Hengerveld De Kol (12 A. R. O. daughters), considered by breeders the best son of the great HENGVERVELD DE KOL (116 A. R. O. daughters, 8 above 30 lbs., 78 above 20 lbs. each). Their ancestry on both sides is full of animals famous in the history of the breed for Milk and Butter production, such as the greatest transmitting cow that ever lived, DE KOL 2D, the granddam of 254 tested cows.

4 Grandsons of PONTIAC KORNDYKE (81 A. R. O. Daughters), sire of P. L. Korndyke, 38.03 lbs. Butter in 7 days, 156.93 lbs. in 30 days; Pontiac Pet, 37.68 lbs. Butter in 7 days; Pontiac C. De Kol, 1271.6 lbs. Butter in 1 year. ALL WORLD'S RECORDS when made. Sire of more 30-lb. cows than any other one sire. Grand sire of the WORLD'S CHAMPION, K. P. Pontiac Lass, 44.18 lbs. Butter in 7 days.

2 Sons of FINDERNE SARCASTIC Pontiac, son of Gordon G. Pontiac (12 A. R. O. Daughters), sire of FINDERNE P. Netherland, 28.62 lbs. Butter, WORLD'S CHAMPION JR. 2-YR.-OLD. This blood comes from the famous FINDERNE Herd of New Jersey, where the first 40-lb., 7-day Butter Record was made.

ALL of the above, as well as several other Eastern-bred sires not mentioned (carrying the blood that has produced WORLD'S CHAMPIONS) are from splendid dams—many have A. R. O. Records and all are from great Milk and Butter ancestry. BULLS bred like these will transmit to their get great Milk and Butter production. Write now for the Catalogue and read about them.

GEO. A. SMITH, Corcoran, Cal.

America's Telephones Lead the World Service Best—Cost Lowest

from *London Daily Mail*

Why is it that Government ownership and management of the telephones is practically always a failure?

Why is it that throughout the length and breadth of Great Britain and the Continent hardly a single efficient long-distance service is to be found? Why is it that in New York one of the most

from *Electrical Industries* (London)

THERE is a certain amount of satisfaction in the fact that Mr. Winston Churchill got so angry over the freaks of the telephone on other day that he flung his receiver on the floor. As a member of the Government which purchased the telephone system, he deserves all the torture that Post Office working can inflict. But his rage, doubtless

From *"Le Petit Phare de Nantes," Paris*

"But today I found I had to talk with Saint-Malo, and, wishing to be put through quickly, I had my name inscribed on the waiting list first thing in the morning; the operator told me—though very amiably, I must confess—that I would have to wait thirteen hours and ten minutes (you are reading it right) in order to be put through."

Herr Wendel, in the German Diet.

"I refer here to Freiberg. There the entire telephone service is interrupted at 9 o'clock p. m. Five minutes after 9 o'clock it is impossible to obtain a telephone connection."

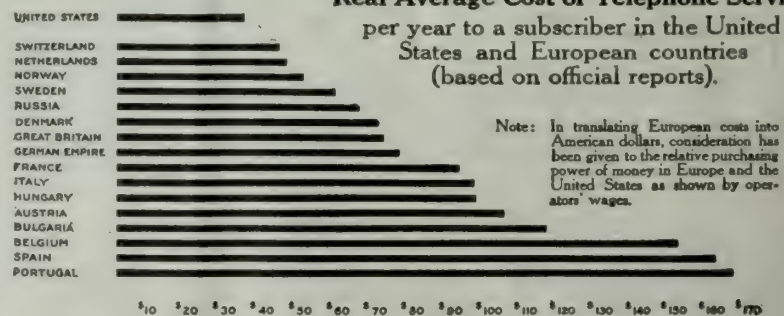
Herr Haberland, Deputy, in the Reichstag

"The average time required to get a connection with Berlin is now 1½ hours. Our business life and trade suffer considerably on account of this lack of telephone facilities, which exists not only between Düsseldorf and Berlin and between Berlin and the West, but also between other towns, such as Strassburg, Antwerp, etc."

Dr. R. Luther, in the Dresden Anzeiger

"In the year 1913, 36 years after the discovery of the electro-magnetic telephone, in the age of the beginning of wireless telegraphy, one of the largest cities of Germany, Dresden, with half a million inhabitants, is without adequate telephone facilities."

Real Average Cost of Telephone Service per year to a subscriber in the United States and European countries (based on official reports).



Note: In translating European costs into American dollars, consideration has been given to the relative purchasing power of money in Europe and the United States as shown by operators' wages.

These are the reasons why there are twelve times as many telephones for each hundred persons in the United States as in Europe.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service

Shipping Day-Old Chicks.

[Written for THE PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

Sometimes mothers on the farm would like to share a nice bunch of chicks with their married daughters or sons at a distance, but don't just know how to ship safely. For a small number of chicks like a dozen or two, a small or medium sized chip basket does very well as a container. Put a layer of alfalfa hay in the bottom and with the hand make it slightly concave. Put in the chicks and sew one thickness of burlap over as a cover. The air can get through the burlap quite freely so there is no fear of the little fellows smothering and the hay together with the heat of their own bodies will keep them warm.

For shipping lots of fifty or more, a box will be better and this can be either of cardboard or box shoo, even a grocery box, if light enough will do. For fifty chicks the inside dimensions should be about 13x15 and 5 inches deep. Tack a piece of burlap, doubled, in the bottom of the box, put in a little hay; this makes good footing for the chicks. After putting in your chicks tack burlap over the top, and last of all nail a one-inch strip of wood across the box. This serves as a handle and prevents the expressmen from putting other boxes on top of the chicks. Paste a label on the burlap cover marked "Live Chicks," with the address, and your chicks will go safely.

Chicks should never be sent out in boxes with smooth floors, like cardboard, without something being put on the floors for the chicks to grip to. Any chicks that fall down are almost sure to be trampled to death so it is better to make safe before trusting them to the mercy of expressmen. I once sent some valuable birds to a show and followed them several hours later. The birds had not shown up when I arrived and no one knew anything about them. I went down to the express office and they were not there, it was near closing time and they said there were no more trains for several hours, but that did not interest me as I knew my birds were in that town somewhere. Finally I unearthed them in the depot buried under a score of boxes filled with all kinds of things.

SWAT THE ROOSTER.—Back in Kansas and Missouri they are having a "Rooster Day," just as we have our Raisin and Orange day, and as we hope to see a Prune day, the most healthful

fruit that California produces. But this rooster day is going to be hard on the poor roosters; it appeals to me a good deal like the "Dr. Ostler" method, of killing off the old folks. Rooster day, however, need not call for killing the rooster, but it does call for their removal from the yard where commercial eggs are being produced. It is very certain that eggs from no-rooster yards, keep better in hot weather, so the idea of "swat the rooster" simply means to remove him to a yard by himself, where he will have time and opportunity to discuss the cruelty and inhumanity of man, that still is inventing plans to make countless millions of roosters mourn for their lost harems. June the first I shall put into practice the Missouri method, as I am a firm believer in eggs from the no-rooster yards for table use. Before an egg will rot bad it must have been fertile, this I have proven many times to my own satisfaction; besides, hens that have been in a breeding yard all spring need a little rest from the males' attentions.

The old theory that the presence of a male made the hens lay better has been exploded many moons ago, in fact they are a hindrance to egg production by robbing the layers of so much energy. One by one we are losing our old-fashioned ideas concerning poultry as well as other things, but we are still tangled up with dead theories and ideas that are hard to let go of.

Now we can be humane in this swatting the rooster, as in other things. If the bird is of no particular value the cheapest and best way is to shut him up in a coop by himself and feed him all he will eat for about two weeks, then dress him for the table. If he has money value make him a shady coop where it will be handy to look after; nail a water can in one corner and put in food and water to last a day or two, not forgetting greens when you go around to feed the rest of the flock.

THE THIRD NATIONAL EGG LAYING CONTEST.—Mr. Quisenberry states that out of a flock of 1000 hens, the average in March was twenty eggs each for the month. The English pen of S. C. White Leghorns breaks all previous records.

As an illustration of the painstaking care given the poultry under Mr. Quisenberry's care, I quote the following from American P. W.:

"Seven hens in the contest have never laid an egg. One hen went blind in a few weeks after she arrived here. Perhaps the starvation and suffering and effects from the hard trip had something to do with it, anyway she went totally blind. We thought she would starve to death before we could teach her to eat and drink of her own accord. We fed and watered her for a time, but today she is laying and is in perfect health and has now learned her way about the pen so that she gets along about as well as a normal hen. She never goes on the roost but she knows where to find her nest, feed, and water. She is kept in a pen by herself. In moving about she always turns to the right. She is apparently in good health, and we believe she will continue to lay. She is from pen six and her name is Helen Keller."

The highest averages have been

made by the following varieties:

All Buff Orpingtons have averaged, per hen, 62 eggs; all Buff Leghorns have averaged, per hen, 61½ eggs; all R. C. Reds have averaged, per hen, 60½ eggs; all Anconas have averaged, per hen, 60 eggs; all Silver Wyandottes have averaged, per hen, 55½ eggs; all S. C. Reds have averaged, per hen, 53 eggs; All Buff Plymouth Rocks have averaged, per hen, 53 eggs; all S. C. White Leghorns have averaged, per hen, 42½ eggs, but the average was cut down by a few pens being out of condition. No variety has made a very low average. Several pens laid more eggs in March than in all the previous three months combined. Nearly half the pens in the contest laid over 200 eggs each in March."

Next week I will tell you how Mr. Quisenberry feeds his chicks.

PARCELS POST NOTES.—The Postoffice Department has taken a few steps in the right direction, though why they should have stopped so short is a puzzle because it robs the test of most of the value. At any rate they have selected ten cities: Atlanta, Baltimore, Boston, Detroit, LaCrosse, Lynn, San Francisco, St. Louis, Rock Island, and Washington, D. C. These cities have been selected to begin the work of establishing direct connections between producer and consumer. The postmasters of these cities are now getting down to work by securing a list of

names of persons who are willing to supply farm products in retail quantities by parcels post. Printed lists of these names are to be distributed among city and town postmasters. This means free advertising for the people in the zone around these selected cities. Postmaster General Burleson, has also issued an order permitting the use of crates and boxes for butter, eggs, poultry, vegetables and fruit shipped by parcel post. Packages under 20 pounds must be packed safely so that the contents will not leak, as they will be put in mail pouches with other mail. Egg crates and boxes of farm produce over 20 pounds up to 50 will be sent separate, as express packages are sent. Live poultry and baby chicks are not mailable but must go by express as before.

The best way to express eggs that are intended for table use is in the regular 30 dozen case with clean fillers. In this receptacle the eggs, if kept in a cool clean place will be perfectly good for two weeks, which is as long as would be necessary for two city families to co-operate and buy one case between them. Unfortunately the 50 pound limit disbars this package because a case of good eggs will weigh along towards 60 pounds, besides the size is against it as the parcel post package must not be over 72 inches, while a 30 dozen case is nearer 80 inches in girth.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

BABY CHICKS—34,000 hatching capacity; orders taken now for White Leghorns, Black Minorcas, Rhode Island Reds, to be shipped from 16th to 18th of April and 19th to 25th of April. All choice quality. Stock can not be excelled. Western Hatchery, Petaluma, Cal. References, Petaluma Nat'l Bank.

BABY CHICKS!—June and July prices. R. I. Reds, Black Minorcas, \$11 hundred; 12c each in small lots. Breeding stock for sale, \$15 dozen, mated. Also have some fine White and Brown Leghorn, Barred Rock and Buff Orpington hens for sale. Roofden Poultry Ranch, Campbell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds, and other varieties. Capacity, 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

WHITE AND BROWN LEGHORN chicks, from heavy laying strain, \$9 per 100. Get our strong chicks and see how easily they are raised. Good breeding pens reasonable. J. H. Stubbe, Campbell, Cal.

INCUBATOR CHICKS—White Rock, Black Minorca, White, Brown and Buff Leghorns. All high-class stock. Send for booklet of prices. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

EGGS FOR HATCHING—Pure-bred White Rocks, \$1 per setting; \$6 per 100; until September 1. Mrs. J. B. Tupper, Ceres.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

BUFF LEGHORNS—Prize winning strain. Eggs \$1 per setting, \$5 per 100. Chix \$10 per 100. Amos Bowler, Petaluma, Cal.

PETALUMA HATCHERY, now booking orders for spring. Leading varieties. L. W. Clark, Petaluma.

PETALUMA BROODER STOVE, Haywards, Cal. Best on market. Latest improvements. Catalogue free.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BUFF AND WHITE ORPINGTONS. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

PIGEONS.

THOROUGHbred CARNEAUX, \$2.50 mated pair; youngsters \$6 dozen. Homers, \$1 mated pair. Sunny Slope Squab Farm, Healdsburg, Cal.

BELGIAN HARES.

THOROUGHbred Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

FREE BOOK

Raising Calves without milk. Everything you need for stock and poultry raising. Write today.

F. F. SMITH & CO.,
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Free Book

giving a full account of hatching, raising, and caring for chickens,

with details of a Complete System of Feeding.

Will be sent to you on application

COULSON CO.
Box E Petaluma, Cal.



Chicks from a S. C. white leghorn strain we have been working up for 20 years. Write today (a postal card will do) for our special low prices for the next three months.

S. C. WHITE LEGHORNS BABY CHICKS
Write today and get chicks for winter laying and excellent profits
THE BIHN HATCHERY Largest in the World. Capacity 165,000 Chicks PETALUMA, CAL.

The Home Circle.

Sodas Valuable Uses.

A housekeeper of many years' experience states that she is convinced that most ladies do not know the value of baking soda or saleratus as a help to economy in housekeeping. It is one of the least expensive and most indispensable articles in kitchen use, saving, as it does, flour, sugar and fuel. It is also a great aid to cleanliness, in that respect saving soap. A smaller quantity of flour is needed when soda is used in preference to baking powder or yeast. Acid fruits, such as cranberries, gooseberries, plums, prunellas and rhubarb, require almost an unlimited amount of sugar, much of which can be saved by stirring in before sweetening, a little soda; as a general rule, a half teaspoonful to a quart of fruit. A little soda put into the water in which

you boil vegetables and tough meats will make them tender and sweet, besides hastening the cooking, and thereby saving fuel. Ham should be par-boiled in soda water, taken out, washed and scraped well, and then finished by boiling in clear water. This method makes it sweeter and more tender than the ordinary way. In warm weather meat may be freshened by washing in cold soda water before cooking. If slightly tainted, this treatment will effectually cure it.

It is not only a saver of soap, but more cleanly—readily removing grease from dishes, tinware and sinks. When added to dishwater no soap is needed and you have no suds or greasy rim around the dishpan. Used in this way it imparts that polish to the dishes so pleasing to the dainty housewife. Baking soda or saleratus dissolved in water is not only harmless, but delightful and cleansing to the most delicate skin.

One use that soda may be put to, and one that nothing that I know of is a satisfactory substitute for, is in the washing of hair-brushes. It is far superior to soap for this purpose, leaving the bristles absolutely clean and as stiff as before they were wet.

In Cooking Vegetables.

Remember that most vegetables should be put on to cook in freshly boiled water.

That salt should be added when they are about two-thirds done.

That lying in very cold water for an hour or more will partially restore to wilted vegetables quality and freshness.

That every green vegetable should be cooked rapidly and uncovered, to retain its color.

That when soft water is used the salt must be in from the first, to prevent loss of flavor and substance.

That cooking a vegetable after it is done toughens, darkens and detracts from its flavor.

That the best dressing for vegetables at their perfection is butter, pepper and salt—cauliflower and perhaps asparagus excepted.

That older or staler vegetables are improved by a cream or butter sauce—the basis for the latter being the reduced liquid left when the cooking is finished.

The Cooking Time Table.

Time for boiling vegetables:

String beans, from 20 to 30 minutes.

Lima beans, 30 minutes.

Beets, 4 hours.

Cabbage, 1 hour.

Carrots, 1 hour.

Cauliflower, 30 minutes.

Celery, 20 to 30 minutes.

Onions, 45 minutes.

Potatoes, 20 to 30 minutes.

Corn, 5 to 8 minutes.

Yellow turnips, 1 hour and 30 minutes.

White turnips, 1 hour.

Tomatoes, 15 to 20 minutes.

Mrs. Henderson has a family of nine children, and the skeleton in her house is in the shape of a stocking basket which is never empty. In response to a question from her maid as to what she supposed there would be to do in the next world, she said playfully: "Well for one thing, I am quite sure we shan't have to darn stockings after ten o'clock at night, Bridget." "Sure, and that's thrue for you, ma'am," re-

Bulk Chocolate

attracts flies, absorbs dirt and germs. Ghirardelli's Ground Chocolate *sold only in hermetically sealed cans*, is always fresh, clean and healthful.

D. Ghirardelli Co.
Since 1852

Send for sample can.
KNOW what a delightful beverage
Ghirardelli's Ground Chocolate is.

Don't Plaster Your Walls

BISHOPRIC Saves Money—Gives Better Results



Beautiful Walls and Ceilings

—better than old-fashioned "lath-and-plaster" at less cost—are insured by the use of Bishopric Wall Board.

Easy to apply

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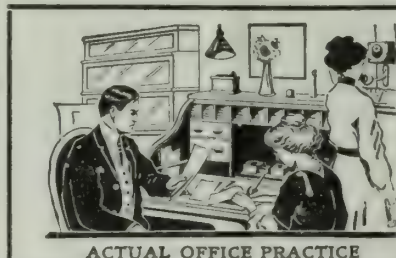
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plied the sympathetic Bridget, "for all the pictures av angels that iver I saw was barefuttet."

"What's the matter with your wife? She's all broken up lately."

"She got a terrible jar."

"What has happened?"

"Why, she was assisting at a rummage sale, took off her new hat, and somebody sold it for thirty-five cents."

Old Time Cookery.—Little Eugene, aged three, is the baby of the family. One night, after having his supper and being put to bed, he propounded to his mother this question: "Mamma, who got my supper for me when you was little?"—Beacon Light.

Rags make paper,
Paper makes money.
Money makes banks,
Banks make loans.
Loans make poverty,
Poverty makes rags.

—Houston R. Club.

Natural History.

"I don't suppose," remarked Gregg Holloway, grinning ruefully, "that I'll ever have the nerve to call my son down again."

"What went wrong?" we asked him.

"It was this way. We were invited out and the kid exhibited his worst table manners. I leaned over to him and whispered—in a stage whisper—'You're a little pig!'"

"The kid just grinned."

"Do you hear?" I hissed. "You are a little pig! Do you have sense enough to know what a little pig is?"

"Yes, papa," answered the child, trying to look innocent.

"Well, then, what is it?"

"A pig is a hog's little boy!"—Cleveland Plain Dealer.

Don't borrow trouble, dear, today;
Wait and think about it!
Maybe, dear, if you delay,
You'll get along without it!

Our Young Folks

The Little Red Crutch.

"The worst of it is," said Nanette, "that there isn't any garret to this house."

Nanette was leaning on the parlor window, pulling the lace curtains very much awry, and looking disconsolately out into the wet street.

"I don't mind rainy days in story-books," continued the small philosopher, "because there are always garrets in story-books—always; and little girls find the loveliest things in them when it rains—old laces, and skeletons, and things."

"Skeletons!" ejaculated the listener at the other window. "My, Nan! Should you like to find a skeleton? I'm rather glad we haven't any garret, if skeletons live in garrets. But I tell you what," lowering her voice mysteriously, and coming over to stand on the same long-suffering curtain that Nan was abusing, "there is a little shut-up place in this house that must have something awful in it."

The "little shut-up place" was a closet in the third-story back room. A gabled roof made irregularities in the room, and one of them developed into a dark closet.

"But it's locked," objected Nanette. "No, it isn't. I pulled it open one day, just a very little way."

"And what was inside?" "Nothing," confessed the discoverer, "except dust and darkness. But I didn't go in, you know. I wouldn't for anything."

The next minute two slim little figures might have been seen—they could not be heard—stealing up the great Queen Anne stairway. Tiptoeing, and covering up laughing lips, and pinching each other, they reached the third-story back-room, and stood before the closed door. But it was not an obstinate door; and the small, cunning fingers soon had it open. Darkness and dust, indeed!—plenty of both, and nothing else to be seen.

"Would you be afraid to go in, Nan?"

"No, indeed! 'Fraid of what?" "Would you go way back to the very darkest end?"

Nan insisted that she would.

"Well, then, do it!" dared the other; and sturdy Nan plunged into total eclipse. She came back to the cheerful light of day with great alacrity, covered with dust, of course—eyes full, nose and mouth ditto, apron looking like Cinderella's, and something in her hand. Winking her dusty lashes, she held up her discovery. It was a little red crutch.

Downstairs they clattered, with noise enough to make up for their silent ascent, the little crutch bobbing along each step as they flew down to Grandmother's room.

The look that came into Grandma's eyes when the crutch was held up was very much the look Anita would have shown if the skeleton had been found indeed, or a ghost.

There was clearly something to tell; and, as a story on this wet day would be even more delightful than finding a skeleton, the dear old lady was at once put in a state of siege, the crutch and two little girls sitting down obstinately before her.

"One breezy fall day," said Grandma, surrendering at discretion, "a little girl went out to the barn to swing."

"What barn, Grandma?"

"This barn," she answered, "was the most delightful place in the whole world. It was none of your fine Northern barns, with stained-glass windows, but a great high-roofed, dark-raftered place, where cobwebs had leave to sleep, where the breeze wandered in and out all day, and the sunshine played about, as the children did hunting eggs. It was full of sweet odors from the hayfield on one side and the apple orchard on the other; and the little Virginia girl, whose swing dangled from one of the lower beams, had no idea that anybody in the world had a higher claim on it than she had."

"What was her name, Grandma?" "Her name," said the old lady, looking startled—"her name was Nancy, of course."

"And she went out to swing one day," prompted the listener.

"She went out to swing one day, determined to 'work up' till she touched the beam. She was very strong and very skilful. She put her little bare feet on the board seat, seized the rope high up, gave a tilt this side and that, and was off. Do you know how to 'work up'—how to bend the knees, and straighten them again with a jerk that sends the obedient swing flying through the air? Nancy came so near the beam that its cobwebby dust sifted down in her eyes (not the beam she was hanging to, you know, but another). So close, and yet not to touch! Ambitious little goose! she suddenly threw out her hand, and struck the great log with her fist. But the loosened rope swung away from her, the board tilted, she hung only by one little hand in the air; and soon the impetus of the swing jerked that hold loose, and she fell."

"Ah!" cried the little girls, with a sob of pain—"ah, Grandma! was she killed?"

"No, not killed; but sometimes in the long winter months that followed, when she was weary and racked with pain, Nancy wished that she had been killed. Then this little crutch was made for her at the carpenter's shop on the plantation, and padded on top, and"—

"Painted red?" interrupted Anita.

"No, not then. Nobody had ever heard of painting a crutch red; but one rainy day like this, when poor little Nancy felt so tired and sad, and had no hope to cheer her, but lay on the couch and counted how many long months must pass before she could run and walk again, her mother came and knelt down by her—dear, sweet, angelic mother! [what made grandma's voice sound so queer, they wondered]—and said, 'Mother would do anything in the world to please her little daughter.' 'Would you, Mother?' cried Nancy, starting up from her pillow, 'would you let me read in your diary?"

"The mother turned red for a minute, while the little cripple watched her eagerly. Then she got up and went to the old-fashioned secretary with sliding doors, and brought back a large red morocco book with a brass clasp, and put it in Nancy's hands. It had been the dream of the child's life to read what Mother wrote every night in this book. I do not think she counted her fall too high a price to pay for it."

"You may read that red book yourselves some day, my darlings, and find out how your blessed great-grandmother lived and loved. But one page in it made a difference in that little



Bakes to Perfection

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FOR BEST RESULTS
USE PEARL OIL

STANDARD OIL
COMPANY
(California)

reader's whole life. It said: 'Our Nancy is bearing her pain like a hero. When I see her smooth the little twitching face and smile up at me, I thank God for her brave spirit, and take her for my teacher. I shall be a better woman all my life for watching her.'

"After that rainy day, and after reading that brass-bound morocco book, Nancy was never sad or dreary again. She actually had the little crutch painted red, in token of her gay spirits; and, wherever its tap-tap was heard (and it sounded on those floors for almost two years), a merry sound of laughter and chatter was pretty sure to follow—so sweet was it to the child to win such dear praise, and to know that Mother counted her a blessing for which to thank God."

The story was ended; and in a twinkling the little red crutch fell, resounding, to the floor, while two pairs of soft arms held Grandmother in a tight embrace.

"O Granny dear! we've caught you now! You were little Nancy, and the crutch was yours."—Sunday School Times.

Dolly, discovering a crock mark on her hand, exclaimed: "When I touched the stove lid I knew it was black; but I didn't know it was contagious."—Exchange.

"I suppose your baby sister cries some?" asked one of the neighbors. "Cries!" said Mary. "Why, she just seems to look on the dark side of things all the time!"

"My oldest daughter," said Mrs. Twickembury, "has studied for two years at the best school of electrocution in this city."

THE STEPHENSON PATENT COOLER.

NO ICE REQUIRED.
Perfect ventilation. Absolutely sanitary.



Awarded first prize wherever exhibited. Not for sale at your dealer's, write for particulars and prices.

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The A. I. Root Co., Box 1 58 Sutter St., San Francisco, Cal.

THE MARKETS.

San Francisco, May 20, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Local prices have been shaded a little this week, as considerable grain has been coming in and offerings are in excess of the demand. Buyers are taking little interest.

California Club, ctt....	\$1.60	@1.65
Forty-fold	1.65	@1.70
Northern Club	1.60	@1.65
Northern Bluestem ...	1.72½	@1.75
Northern Red	1.62½	@1.70

BARLEY.

Values stand about as before, but the market is very weak. Buyers are working on a hand-to-mouth basis, keeping the movement down to narrow limits, and holders are anxious to reduce their supplies in anticipation of early offerings out of the new crop.

Brewing and Shipping. Nominal	
Choice Feed, per ctt....	\$1.00 @1.05
Common Feed	Nominal

OATS.

While there is very little demand, the oats market shows more strength than for some time past, as all grades are very scarce. Fancy white oats have been marked up a little, though most offerings are still held at the old figures.

Red Feed	\$1.20 @1.30
Gray	Nominal
White	1.30 @1.35
Black Seed	Nominal

CORN.

California Yellow	Nominal
Eastern Yellow	\$1.80 @1.85
Eastern White	Nominal
Egyptian	1.85 @1.90
Milo Maize	1.80 @1.85

There has been a little demand for Eastern corn this week, and supplies are pretty closely cleaned up at the moment, resulting in higher prices for the little that remains on hand.

RYE.

Values stand nominally as before, but there is practically nothing offered and no demand is in evidence at the moment.

Rye, per ctt....	\$1.45 @1.50
------------------	--------------

BEANS.

Prices have been marked down again this week on practically all varieties, but this does not apparently indicate any underlying weakness in the general situation, the figures being still comparatively high, with no prospect of further declines. On the basis of present values, there is a very fair demand, and local stocks have already been reduced to very small compass for this time of year. Planting of limas is well advanced, with prospects of somewhat larger production than last year, and planting of some other varieties is now under way. It is expected that the entire acreage will be large, with favorable conditions for production. The New York Journal of Commerce says:

"The Lima Bean Growers' Association of California, through the J. M. Waterman Selling Agency of Oxnard, is again soliciting orders subject to approval of prices when named for 1914 crop limas. Conditions of the 1914 crop at this time, according to latest advices, as they appear to the association's representatives, are favorable for an output of fair size, but in order to insure these conditions, favorable weather during the growing period must prevail. A slightly larger acreage than last year has been planted this season in some sections. To such trade as wish to buy at fixed prices, the following net cash quotations have been made, subject to the conditions of uniform California Bean Dealers' contract for future sales: September-October shipment, \$5.20; all October, \$5.15; October-November, \$5.10. Such contracts are absolutely net gross weights, f.o.b. rail points in California. No price is named on all September shipment, due to the fact that it is expected that such shipment will command considerable premium owing to the close clean-up of 1913 supplies, and because of the heavy sales already

made, to be sent forward in that month."

(On wharf.)

Bayos, per ctt....	\$6.25 @6.50
Blackeyes	7.50 @7.75
Cranberry Beans	4.25 @4.50
Horse Beans	1.90 @2.15
Small Whites	5.00 @5.25
Large Whites	3.90 @4.10
Limas	6.50 @6.75
Pea	4.00 @4.25
Pink	3.90 @4.00
Red Kidneys	Nominal
Mexican Red	6.00 @6.25

SEEDS.

The spring business in the lines quoted is pretty well over, and there is no large demand for anything. Values remain steady, with the principal offerings in strong hands.

Alfalfa	12½ @15 c
Brown Mustard, per lb....	3½c
Canary	7 @ 7½c
Hemp	2½ @ 3 c
Millet	2½ @ 2½c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Values remain steady as last quoted, and the local movement is on about the usual scale, with a fair export business from the north.

Cal. Family Extras....	\$5.80 @6.20
Bakers' Extras	4.80 @5.40
Superfine	3.90 @4.20

Hay and Feedstuffs.

HAY.

The hay market shows very little change. The city trade has been extremely dull, and while little is coming in, most offerings are on consignment, and cannot be moved to advantage. Most arrivals are of the lower grades, though some grading as No. 1 is appearing. Buyers are unwilling to take on any large supplies at present, and so far little buying has been done in the country. Harvesting is well under way, with prospects for very large crops. Grass in the grazing districts is plentiful, with very little stock to feed. In view of the abundant supply, dealers are emphasizing the importance of care in curing and baling in order to get a market for the new crop.

No. 1 Wheat, or Wheat and Oats	\$11.50 @13.00
do No. 2	10.00 @11.00
Lower grades	8.50 @ 9.50
Tame Oats	9.00 @13.00
Wild Oats	8.00 @10.00
Alfalfa	8.00 @10.50
Stock Hay	6.50 @ 8.50
Straw, per bale.....	60 @ 90c

FEEDSTUFFS.

The local demand is limited to routine requirements, with no indications of a large movement anywhere. Values are unchanged, but there is little firmness in any line.

Alfalfa Meal, per ton....	\$18.00 @19.00
Bran, per ton	24.50 @25.50
Oilcake Meal	34.00 @35.00
Cocoanut Cake or Meal..	26.00 @27.00
Cracked Corn	41.00 @42.00
Middlings	32.00 @34.00
Rollod Barley	22.00 @22.50
Rollod Oats	28.00 @29.00
Shorts	26.00 @27.00

Garden Truck.

VEGETABLES.

Summer vegetables are beginning to come forward more freely, and it is expected that several new items will be added to the list within the next few weeks. Green corn is now coming in with fair regularity, but prices are well maintained. Some tomatoes are arriving from southern California, but Mexican stock is still selling up to \$2.50 per box, and Florida stock even higher. Receipts of asparagus are ample for the local market, as the demand is decreasing, and prices are a little lower. String beans are easier, while green peas are firm, with an advance in the Telephone variety. Green peppers are much lower. Rhubarb is lower, with little selling at the top figure. Cucumbers also have been marked down.

Cabbage, per ctt....	\$1.00 @1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb....	3 @ 8c
Carrots, per sack.....	35 @ 50c
Green Peas, sack.....	2.50 @ 4.50
Tomatoes, Southern, crate	1.50 @ 2.00
Beans: Wax	4 @ 6c
String	4 @ 6c

SPRUCE BOXES LUMBER

FRUIT, CANNERY, BUTTER

AND ALL OTHER KINDS

PACIFIC BOX FACTORY

353 BEACH ST. SAN FRANCISCO, CALIF.

OPERATING OWN LOGGING CAMPS AND MILLS

Rhubarb, box	50c @ 1.00
Mushrooms, hothouse, lb.	25 @ 30c
Asparagus, box	75c @ 2.00
Cucumbers, box	75c @ 1.25
Eggplant, lb.	10 @ 15c
Green corn, box.....	1.00 @ 1.25

POTATOES AND ONIONS.

Everything under this head stands as last quoted. River potatoes of all kinds are coming in freely, but the prices have been fairly well maintained this week. Onions are still very scarce, the market being principally supplied with Australian and Bermuda stock. Garlic remains firm, with some fancy Mexican stock selling readily at the top figures.

Potatoes:	
River Whites	40 @ 60c
Garnets, lb.	2½c
New Potatoes, lb.....	1½ @ 2½c
Oregon Burbanks	75c @ \$1.00
Sweet Potatoes, per ctt..	2.50
Onions: Australian	\$4.00 @ 4.25
Bermuda, crate	2.00 @ 2.50
New Crop, box.....	40 @ 60c
Garlic, new, per lb.....	10 @ 15c

Dairy Produce.

POULTRY.

Eastern stock has been in light supply, but young local chickens are coming in freely, and last week's figures on broilers and fryers have been considerably reduced. Otherwise values stand as last quoted. All desirable offerings meet with a very fair demand.

Large Broilers	24 @ 25 c
Small Broilers, per lb....	21 @ 22 c
Fryers, per lb.....	24 @ 25 c
Hens, extra, per lb.....	19 @ 20 c
Hens, large, per lb.....	19 @ 20 c
Small Hens, per lb.....	18 @ 19 c
Young Roosters, per lb..	24 @ 27 c
Squabs, per doz.....	\$2.50 @ 3.00
Geese, per pair	2.50 @ 3.50
Ducks, doz.	6.50 @ 8.00
Turkeys, live, per lb....	20 @ 21 c
do dressed, choice....	23 @ 25 c

BUTTER.

Extras are steadily held at the same level as a week ago, with very little surplus offering, though the demand has not been sufficient to cause any advance. Firsts and prime firsts have gained ½c, with a fairly active demand for these grades.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24	24	24	24	24	24
Prime						
Firsts	23	23½	23½	23½	23½	23½
Firsts	23	23½	23½	23½	23½	23½

EGGS.

Supplies continue to come in quite freely from nearby districts, and while there is a good demand, extras have dropped a cent. Firsts also show a ½c decline, and pullets, after some slight fluctuations, stand ½c below last week's level.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	23	23	22	22½	22½	22½
Firsts	22	21½	21½	21½	21½	21½
Selected						
Pullets	21½	21½	20½	21	20	21

CHEESE.

Cheese is firm, with lighter arrivals for the last few days, though it has been impossible to get any quotable advance in prices.

Fancy California Flats, per lb....	13½c
New Young Americas, fancy.....	15½c
Monterey Cheese	12 @ 13 c

At Los Angeles the dairy produce markets for the past week have been as follows:

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras	24	24	24	24	24	24
Eggs	23	22	23	23	23	23

Cal. cheese:	
Flats	13½ 13½ 13½ 13½ 13½ 13½

Deciduous Fruit.

The berry market in general is holding up well, with a lively demand, although supplies are increasing. Blackberries are now coming in regularly, and find ready sale at good prices, while currants, loganberries and raspberries are a little lower. Strawberries are steady, with little change. Apples are moving in a small way at the old prices. New items in the fruit list are apricots, peaches and cantaloupes. Apricots from nearby points sell readily at the top figure, while southern stock moves slowly. Peaches so far are scarce and firm, though the demand is limited, while cantaloupes are in good demand, but declining, with larger offerings. Royal Anne cherries are offered in liberal quantities, and sell readily at about \$1 per box, while other varieties are considerably lower. A few figs are coming in and bring about 40 to 50c per pound.

Up to May 18, the California Fruit Distributors, an association of most of the largest deciduous fruit-shipping companies of the State for the purpose of distributing fruit intelligently to the various Eastern markets, had shipped 31¼ cars of cherries and 1¼ of apricots, as compared to total shipments of 16 cars of cherries only to the same date last year.

Blackberries, crate.....	\$1.00 @ 1.35
Loganberries, chest	6.00 @ 8.00
Raspberries, crate	1.00 @ 2.00
Strawberries:	
Malindas, chest	2.50 @ 4.50
Banner, chest	2.50 @ 4.00
Longworths, chest	4.00 @ 6.00
Apples: Newtown Pippins	1.00 @ 1.75
Oregon Spitzenbergs ..	1.40 @ 2.00
Apricots, crate	1.00 @ 2.00
Peaches, crate	1.50 @ 2.00
Cherries:	
Black Tartarian, box..	75 @ 85c
White, box	50 @ 75c
Royal Anne, box	75c @ 1.25
Loquats, crate	75c @ 1.25
Currants, drawer	75c @ 1.00
Cantaloupes, crate	4.50 @ 5.00

Dried Fruits.

The only quotable change in fruits this week is a slight advance in prunes, offers of 6½c for choice stock out of the new crop being fairly general. Interest in this fruit is stronger than anything else, as there is a good deal of inquiry from Eastern buyers who are anxious to cover their early requirements, and some foreign demand is also reported. Crop conditions in general show little change from what has been formerly reported, and there seems to be little doubt that the current values will be sustained. Apricots also are receiving some attention, but buyers are showing more interest than sellers, as this fruit is in strong demand for canning and shipping. Many reports of a shortage of peaches have been received, and values are pretty firmly held, with a good jobbing trade out of spot supplies through the East, though packers show no disposition to raise their former offers. So far nothing has been done in apples or pears. The former are expected to be rather scarce from present indications. Old raisins are steady but quiet, while new-crop offerings show more firmness. The New York Journal of Commerce says: "All packers of California prunes are holding to their quotations, but there seems to be an easier undertone, and while there is no quotable change from the figures recently named

an easier feeling prevails in buying quarters at least.

"The majority of Eastern buyers, while far from having covered their early fall requirements out of the current season's crop, are said to be fairly well supplied on recent purchases and are now waiting to see what will develop in the Coast crop situation. They seem to have got the idea through reports from one source or another that the crop situation is not so bad as had been represented by the earlier advices, and in fact appear to be looking for a reaction in the f.o.b. market following the late rapid advance.

"While local distributors are giving little attention to spot peaches and not much to offerings for delivery out of the 1914 crop, country buyers are reported to be taking hold of spot goods quite freely, and, though individual orders are small, the quantity absorbed each day on such transactions is considerable in the aggregate, confirming holders in the firm views they have expressed for some time past. On future peaches the feeling remains firm, but prices are nominal in the absence of important demand.

"California seeded raisins are without animation. There appears to be little demand for spot or future goods so far as the trade in this section is concerned. On futures the association still withholds quotations. Some of the outside packers who opened the market on 1914 crop seeded Muscatel raisins at 6½¢ for fancy and 6¢ for choice f.o.b. Coast in 16-oz. cartons have raised their quotations ¼¢ on both grades.

Evap. Apples, 1914.....	Nominal
Apricots, 1914	9 @ 9½¢
Figs: White, 1914	3¼¢
Black	Nominal
Calimyrna, 1914	4½¢
Prunes, 4-size basis, 1914..	6 @ 6½¢
Peaches, old and new....	4 @ 4½¢
Pears	Nominal
Raisins (In sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½¢
Seedless Sultanias	4 c

Citrus Fruits

The Eastern citrus auctions are in fine shape and paying good prices for both oranges and lemons. Shipments from California are still averaging over 200 cars daily, though in some sections the navels have all been shipped and valencias have not started. Last week saw the beginning of valencia shipments in car lots, and from now till October this variety will probably dominate the market. It is estimated that the valencia crop will amount to 11,000 cars.

On the New York auction, Monday, May 18th, 26 cars of navels were sold on an advancing market, prices averaging from \$1.95 up to \$3.55 per box. A small lot of valencias brought \$2.25 and \$3.40. St. Michaels sold for still better prices. On the Los Angeles auction, last Monday, sweets brought \$1.72½ f.o.b. California.

Lemons are advancing as the hot weather approaches, and growers anticipate a fair season.

Shipments of oranges from Florida continue quite heavy, but will soon cease. For the entire season that State will ship out over 20,000 cars.

Valencia oranges are now appearing in the San Francisco market, and fancy stock finds ready sale at \$2 to \$3. Navels receive only moderate attention, with prices unchanged, and values in other citrus lines are steady as last quoted, with about the usual demand.

Oranges: Navels, box.....	\$1.00@ 2.50
Valencias, box	2.00@ 3.00
Tangerines, crate	75¢@ 1.25
Grapefruit, seedless, box..	1.50@ 2.50
Lemons, box	2.00@ 4.00
Limes, case	9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing new in this line, as the old prices are entirely nominal, and nothing has been done toward establishing new-crop values. Spot supplies in the trade are very light, and the demand is limited, though the new crop of both almonds and walnuts is expected to find ready sale.

Almonds:	
Nonpareils	19 c
I X L	18½¢

Ne Plus Ultra	17½¢
Drakes	15¾¢
Languedoc	15¼¢
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½¢
Budded	19 c
No. 2	11½¢

HONEY.

Local offerings of new stock have so far been light, and there is not much demand. Larger supplies are expected shortly, however. Reports as to the crop are uncertain, with an apparent shortage in some places and a good crop in others. It is expected that fancy orange comb honey will bring about 16c.

Comb: White	12 @ 13 c
Amber	10 @ 11 c
Dark	9 c
Extracted: White	5 @ 6 c
Amber	4½ @ 5½¢
Off Grades	3 @ 4 c

BEESEX.

Values show no change. There is no large movement, but all offerings find a fairly good demand

Light	30 @ 33 c
Dark	28 c

HOPS.

Trading has been rather quiet for the last week, though a few small sales of old stock have been made, and there is some contracting of the new crop all the time. Reports from some growing districts of late have been unfavorable, but values have not been noticeably affected.

1913 crop	15 @ 17½¢
1914 crop	14 @ 15½¢

Live Stock.

Local prices, both for live stock and dressed meats, have stood without change for some time. There is a strong demand for feeders all over the country, as the ranges are now very lightly stocked and feed conditions are the best in years. This tends to limit current offerings for the market, though the demand is not especially large.

Steers: No. 1	7¼ @ 7½¢
No. 2	7 @ 7¼¢
Cows and Heifers: No. 1..	6¼ @ 6½¢
No. 2	5¾ @ 6 c
Bulls and Stags	3½ @ 5 c
(Grass-fed cattle, ¼ @ ½¢ less.)	
Calves: Light	8½ @ 9 c
Medium	8 @ 8½¢
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy...	8 c
150 to 250 lbs.	8¾ @ 9 c
100 to 150 lbs.	8½ @ 8¾¢
Prime Wethers	5½ @ 5¾¢
Ewes	4½ @ 5 c
Milk Lambs	6 @ 7 c

DRESSED MEATS.

Steers	12 @ 12½¢
Heifers	11½ @ 12 c
Veal, large	12 @ 13 c
Small	14 @ 15 c
Mutton: Wethers	11 @ 11½¢
Ewes	10 @ 10½¢
Suckling Lambs	13 @ 14 c
Dressed Hogs	12½ @ 13½¢

WOOL.

There is some business in progress all the time, though no great activity is reported in this market, the principal offerings having been sold. The market is firm, with a good Eastern demand for California wools. Considerable activity is reported in the Northwest.

Spring Clips:	
San Joaquin	12@14c
Humboldt and Northern...	15@20c
Calaveras	14@18c

HIDES.

Values are well maintained at the former level, and the market is kept well cleaned up, with a lively demand from tanners and no notable increase in offerings.

Heavy Steers, over 56 lbs.	15 c
Medium	14½ @ 15 c
Light Steers, under 48 lb.	14½ @ 15 c
Heavy Cows, over 50 lb.	14½ @ 15 c
Light Cows, 30 to 50 lb.	13½ @ 14½¢
Kip	15½ @ 16 c
Veal	18 @ 19 c
Calf	18 @ 19 c

Dry—	
Dry Hides	25½ @ 26½¢
Dry Kip, 10 to 15	24½ @ 25½¢
Dry Veal, 5 to 10	29½¢
Dry Calf, 7 down	29½¢

Horse Hides—	
Salt: Large	\$3.00
Medium	2.50
Small	1.00

HORSES.

Offerings in the local market are light this week, as the absence of any strong demand has had a rather discouraging effect on shippers. A good deal of stock, however, is still offered at private stables, and purchasers are by no means plentiful.

Heavy drafters, 1700 lbs. and over	\$275@325
Light Drafters, 1500 to 1650	215@230
Chunks, 1350 to 1500	190@210
Wagon Horses, 1250 to 1350..	150@200
Green Mountain Range.....	120@140
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares.....	75@100

PUBLISHER'S DEPARTMENT.

During the past week the subscription department again got busy, over 200 new subscribers being added to our list—the exact number as reported by our subscription clerk being 247. Never before has our list grown so fast as this spring, and we anticipate a still heavier increase. We want to pass the 500 mark one of these weeks, and believe we will do so if more of our subscribers will help a little in the matter.

Work on getting out the seventh edition of "California Fruits" is proceeding nicely. Professor Wickson has, we believe, read the last of the proof

and is now finishing the index. The last shipment of paper arrived last Friday, and it is now but a matter of presswork and binding. The printers assure us some copies of the book by June 5th, sure. Send in your orders now. Price \$3 per copy, post-paid.

While speaking of books, we wish again to urge the value of our new book, "One Thousand Questions in California Agriculture Answered." Every farmer in the State should have a copy. Orders are coming in steadily, so that in less than five months we have sold two-fifths of the edition. Send for our special subscription offer in connection with this book.

For the convenience of the motoring public, the traffic laws applying to motor cars in the chief cities and towns on the Pacific Coast are set forth in condensed form in a neat booklet just issued by the Standard Oil Company under the title "Traffic Regulations." Traffic laws of the principal cities in the Coast States are so nearly uniform that in a majority of cases a general code serves. However, it is the exceptions that often bring trouble to the touring motorist, and in "Traffic Regulations" special effort has been made to supply motorists with data of this nature. All the matter it contains regarding laws and regulations applying to traffic is a careful compilation from authoritative records. The Standard Oil Company will forward "Traffic Regulations" without charge on application.

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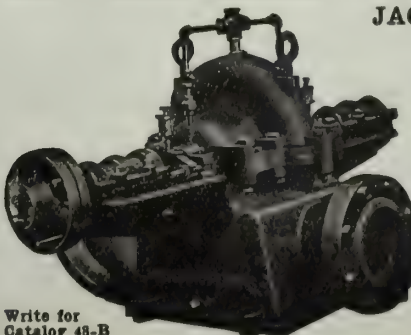
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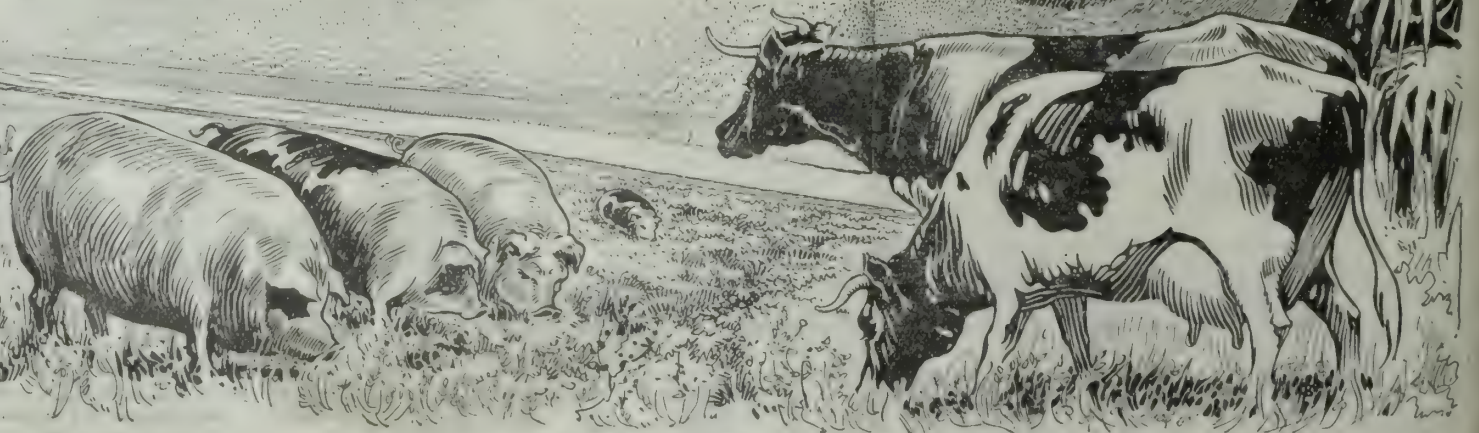
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THE PACIFIC RURAL PRESS

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SAN FRANCISCO, SATURDAY, MAY 30, 1914.

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Forty-Fourth Year.

Best Milk at Minimum Cost.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The sweet-milk business has been a subject of much debate, both by the city consumer, who says "Give me pure milk at a reasonable cost," and the dairyman, who says "Pay me and the world is yours, including pure, wholesome milk." For years dairymen have endeavored to find some happy medium by which both the consumer's and the dairyman's desire for pure milk at a reasonable cost might be satisfied, but results have mostly been discouraging; for in all such undertakings, what might be termed "middle dictators" have told the dairyman what he must do, and instilled into the consumers' minds many notions which, from a producer's standpoint, seem absurd.

Just such a condition existed in Sacramento two and a half years ago, and but for the fact that one independent dairyman (some have even called him "bull-headed"), with ideas of his own regarding sanitation, tackled the job of selling pure rich milk in that city regardless of what tradition and health officers said was right and proper, it is likely that Sacramento would still be at sea insofar as cheap, pure milk is concerned.

The man who has accomplished this is Ralph Newman, of the firm of Newman Brothers, of Elk Grove, although he himself lays the credit largely upon the men who do the milking and take care of the milk afterward; for, as he says, "Without a conscience my scheme would be a failure; and in my absence the men are the conscience. Please mention this in your article," he continued, "for the boys out there in the milk-barn and milk-room deserve most of the credit for the placing of good sweet milk in the hands of our baby customers who largely constitute our trade."

To give in the fewest possible words the foundation upon which this dairy was started, and upon which it is still flourishing, we might quote Mr. Newman still further, when he said: "Individu-

ality counts for more than paraphernalia in the production of milk with a low bacterial count." And his theory seems to be well demonstrated, for it is doubtful if there are many dairies, turning out a similar grade of milk, who have as little money invested in equipment. It is in this respect that Mr. Newman has been, and

still is, doing things differently and more economically than is commonly seen. Although the dairy had been run for several years as a butter-fat proposition, it was at first necessary to go easy with the outlay for improved appliances, on account of a lack of funds. It was here that the first snag was encountered; for it was discovered that the primitive methods that were to be employed did not meet with the approval of the certified-milk inspectors—or perhaps we should say, in fairness to both sides, that not all of Mr. Newman's ideas coincided with those of the medical commissioners—such as the distance of the barn from the dwelling-house of the milkers; the height of the water tank, which necessarily meant a lessened pressure in the barn; and many other less important things.

Now Mr. Newman's idea was that if the milk was bacterially pure and rich, it did not make much difference where the bunkhouse stood, or how much pressure there was in the water pipes; and, above all things, he did not like the idea of having to perform expensive duties because some one else said so. It was his desire to put that sweet, pure milk into the hands of the masses who needed it, at a figure that would allow for cost of production plus reasonable interest, etc.

With this idea in mind, the milking-barn was provided with a small addition, 18 feet wide and 46 feet long, at one side and end of the old horse and cow barn, a type that most farmers will recognize as the California combination barn, with gable roof, and hay mow in the center.

No frills or fancies were included in this building, the plan simply calling for good light and ventilation, which were provided by leaving openings the size of an ordinary window sash, about four feet high, around the three outside walls. The other requisite was good



Milking and Feeding Barns on Newman Bros.' Dairy.



An Important Factor Is Clean Milking—Scene at Newman Bros., Near Elk Grove.

(Continued on Page 624.)

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J. C. LOOMIS }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., May 26, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maxim.	Minim.
Eureka.....	.57	35.54	44.57	72	48
Red Bluff.....	.15	33.03	24.42	90	52
Sacramento.....	.50	19.84	19.85	82	50
S. Francisco.....	.31	29.31	22.00	64	50
San Jose.....	.06	19.13	16.61	74	46
Fresno.....	T	10.85	9.48	88	52
Independ'ce.....	.00	12.00	9.35	82	40
San L. Obispo.....	.02	30.98	20.26	78	46
Los Angeles.....	.01	23.56	15.52	72	52
San Diego.....	.00	9.82	9.93	70	54

T means trace.

The Week.

Two weeks of dull skies ending with quite a wet rain at the beginning of this week has wrought considerable havoc with hay and early ripening fruits on the coast side of central and northern California. It was not greater than is usual from the "hay rains" in May and has been partly compensated for by the refreshed pasturage for those having stock to make good use of it. The low price of hay and the higher cost of handling it emphasizes the regret, which we frequently express, that California has not more grazing animals to put the growth into more profitable form than hay. Readers who desire to escape from this constant preachment of ours ought to buy a few "critters," the best they can afford, and see how much satisfaction there is in the animal business—if one has land for it.

We hope that the general rejoicing over the year's outlook, largely based upon the good wetting down and the responsive verdure which makes California at this moment surprisingly beautiful, will be fully realized. As railroad men are now accepted farming prophets, according to a paragraph, which we will hew out in a minute, we need not give any excuse for citing the conclusions by Southern Pacific leaders. Julius Kruttschnitt recently said: "There is a much more cheerful attitude on the Pacific Coast with regard to financial conditions than in the East and Middle West. 'This feeling undoubtedly is due to the fine crop prospects in California and Oregon.' And Mr. Sproule added: "There will be an abundance of all products, except prunes, of which there will be a short crop in both States. While the railroads will suffer from this prune shortage, I believe that so far

as the growers are concerned, the higher prices will tend to offset the smaller quantity." It is fortunate that this railroad suffering will not be acute, for "orders have been issued to increase the hours of car-shop employes, so that from now on they will be working full time." The cheerful spirit is surely a California product. Even the merchants of San Francisco who have shivered so long under the black clouds in their sky, are, according to printed reports, buying more motor trucks than ever and "have reported an increased trade immediately upon discarding the horse-drawn equipment." How mechanism and gasoline can react so speedily on the demand for merchandise, which would not budge by hay and horse-flesh, passes our comprehension, but it must be a joyful manifestation of the optimistic spirit, and all, perhaps, can take heart from it.

Push the Panama-Pacific.

The Panama-Pacific Exposition will be one of the greatest achievements of California optimism and it will reflect credit on its creative agency. At the close of last week the Panama canal was actually opened for business and there was proper celebration of the event by acclamation and decoration in San Francisco. We offer the suggestion that from this time onward, through the current summer and coming autumn, every Californian pursue a campaign of enlightenment as to the greatness, the beauty and the industrial significance of the display which will open next February for a ten months run. Let each Californian do what he can, in every part of the world where he has acquaintance, to spread knowledge of the really unique and great affair, by personal letters and by descriptive print, in text and picture, which can be had at all emporia for such materials. The way to begin is to visit the exposition site when you come to San Francisco and see what a large array of grand structures is now practically complete and what horticultural beauties are already installed in the environment of these structures. To one who has not watched the work, it will be a great surprise to see what has been accomplished, how grand the scale of construction and outfitting, how dream-like the beauties of architecture and of the site on which they are displayed. One who sees these things cannot resist the impulse to tell the world of them, and therefore, for the world-effect of it, we exhort all who come to the city to give attention to the development of this grand enterprise which will distinguish California as the Empire State of the west. But to attain this, millions of people must come to California next year, as they assuredly will if they understand the inducement we offer. There is also another reason why the food producers of this State should be themselves impressed with the coming event. There will be a local demand for choice food materials such as the State has never known. Fruits and vegetables, dairy and poultry products will all be in exceptional demand. Adjacent sister States will help us entertain the world, but it should be remembered that the whole coast group is widely separated from the rest of the country and many a good producing turn can be made by those who wisely and intelligently prepare for it. It is not a "circus week" affair: it will cover the whole productive length of a year, practically.

Farmers and Railroad Men.

Whenever we have thought lately of the relations of farmers and railroad managers we have become tangled up inextricably. We belong to a generation which considered railroad kings the worst oppressors and tyrants since Pharoah I and now we see farmers running around after them. We have just read a sketch of a meeting of the Inter-State Agricultural and Industrial Congress in St. Joseph, Mo., when 3,665 farmers registered, and apparently had a great time, rooting out chunks of farm wisdom. And we also read that the beneficent tyrant who held this mass of farmers under his iron rule for several days was W. C. Brown, president of the New York Central railway and "one of the foremost men in the United States in the advocacy of better farming," who was permanent chairman of the congress. How does it come about that middle-western farmers, at the rate of ten a day for a whole year, have become so tamed that they ate out of the hand of this despot? We can guess that the railway managers of this generation, having been handsomely lured in their youth by the Interstate Commerce Commission, are permanently converted from the iniquity of their corporate ancestors into real friendship and honest support of the farming interests of the country. Is that the answer to it? If not, we commend the facts which we have noted to the study of our readers.

Rural Credits in Congress.

We seem to see through a glass, darkly, the condition of rural credit propositions in the United States Congress. We gain assurance that our surmise of May 2, that there had arisen a sort of royal ruction over the subject, was correct. The propositions drafted into legislative form by the friends of President Wilson seem to have been practically lost in the shuffle, for the moment at least. It seems that a fairly large flock of proposed laws flew into both houses of congress and perched in the committee cotes of both houses. Some of them evidently had their necks wrung: others lost their tails, but saved something. Out of the lot, according to current report, none fully escaped the committee which instead drafted its own bill, covering mortgage credit and bond issue, but did nothing with short-term loans and did not provide ways by which farmers could co-operatively establish rural credit banks of their own. This bill did provide a way by which the U. S. Treasury could buy bonds based upon mortgage security to an amount not exceeding fifty millions a year, the loan associations organized under the bill agreeing to redeem these bonds gradually when called upon by the U. S. Treasury to do so. These loan associations, of which there is one in each federal reserve district, are to be under supervision of a farm loan commissioner subject to the federal reserve board. This proposition for mortgage loans and bonds purchasable by the U. S. Treasury is apparently the only thing the joint congressional committee will stand for at present, and this proposition is said to be not acceptable to President Wilson's administration, because it provides for the use of government funds. Thus there seems to be a deadlock; Congress not being disposed to accept either of the administration measures, which aim only at helping farmers to organize to help

themselves; and the administration not being disposed to grant government aid. Under the circumstances, it seems doubtful if President Wilson can hold Congress together until rural credit is provided for, as has been held to be his intention. In fact, it is stated that a caucus of democratic Congressmen, voted some days ago, 200 in favor of postponing legislation on farm credit against 20 who favored doing something at once—so President Wilson cannot hold his forces on the job. We are not disappointed at this result; and this is not a political prejudice either—we doubt if any other party would have done better. The vote in the democratic caucus shows that the people have not yet been awakened to any long-felt-want in the shape of rural credit legislation. It seems clear enough to us that unless the agricultural interests, as represented by influential farmers' organizations, go to this matter more clearly and insistently than they have thus far, Congress never will do a thing about it. Therefore we have several times suggested that farmers should themselves decide whether they want anything; if so, what they want, and then insist on getting it. We believe that a congressional majority of any political party will hand over the goods on such an order.

Long-Headed Patriotism.

A very interesting movement is reported from large sugar refiners in New Jersey, who declare that henceforward they will employ only American citizens and will put their present employees through the naturalization mill as fast as possible. The refiners declare their conviction that "better work and more skilled workmen would be available if they insisted on employing American citizens." It is a great patriotic sentiment, and its gleam is not dimmed by the fact that a lot more citizens who will probably vote the same way that they work will be realized. This recourse may be suggestive to other employers whose interests may be like those of the sugar refiners—or possibly opposite thereto. We do not believe too large crops of expedited voters are good for the country, but it is probably a fact that such forcing of citizenship has been hitherto undertaken by urban rather than by rural interests, and, as it is proposed now to use more top-heat than before, it will be well for ruralists to wake up and see how the game is played.

Food for an Active Mind.

An appreciative reader in Sonoma county writes in this way: "Why cannot you finish on the second page the articles which you begin on the first page? You can then put your jocose editorials on the third page, etc. I get tired hunting around for the tails of articles which seem to head all right, but of which I often fail to find the hinder parts." Your mind is too inactive. If the articles ran continuously, you would go to sleep before you reached the end of the first one you tackled. We wish you to skip around and be alert. Besides, if you were not forced to this exercise you might overlook something good—some advertisement, perhaps, which is worth more to you than "the whole cost of a year's subscription." We thank you for the hint to wake you up; also for your tribute to the real essence of our editorials. Probably few readers get to the bottom of them as you do.

Queries and Replies.

Querists must submit full names and addresses.

A Strawberry Bed.

To the Editor: I am anxious to have on my place at Los Altos an ideal strawberry patch. The soil is light. How shall I have the ground prepared to get the best results? As the area will be very small, I am willing to do whatever is necessary to obtain an abundance of early, midseason and late berries. What commercial fertilizer may be used on strawberry plants to increase the fruit yield?—Suburban, San Francisco.

Spread a good amount of stable manure and dig in now the full depth of the spade or fork. As the soil is light, enclose the patch with a levee to be six or eight inches high when the ground settles. This will enable you to irrigate by flooding the check to get even distribution. Keep the surface cleanly hoed this summer to kill weeds and retain moisture. Work up well after the rains and plant Longworth Prolific, Dollar, Jessie, Melinda, and Brandywine—if you wish quite a variety to draw from. The length of your bearing season will depend upon how well you use water. A "complete fertilizer" such as is sold by dealers for fruit purposes, is right for strawberries. Be careful not to fertilize too heavily or you will get mostly leaves. Let the plants tell you by their behavior what they need. Read "California Fruits" for more details of California methods.

Rotation.

To the Editor: I have some land that has been sown in oats for about six years. Can you please give me a good rotation of crops for this land?—M. E., Napa.

One cannot wisely prescribe a rotation simply by schedule. One has to know the land, the markets, and the amount of capital and knowledge available. The simplest and easiest rotation to make, if you have the money to stock it up, would be to go to pasturage. Alternation of pasturage and cereals, half the land to each each year, is a good way to improve the land. If you are not ready to farm with stock, the next crop after grain would be potatoes, beets, or other roots by deep tillage, if you believe you can sell the crop to advantage. Or you could improve the land by alfalfa for hay (if you cannot feed it), or beans if your land is fit for it. There is no great advantage in changing one grain for another. Unless you are ready for a radical change to roots or legumes you had better use fertilizers and grow more oats if they are profitable.

Pollination in Garden Planting.

To the Editor: I have planted in my garden one apricot, two peaches and plums, one almond, one White Adriatic and one Mission fig. A neighbor says I will not get any fruit unless I plant two varieties of each fruit. Is that true?—Suburban, Ventura county.

It is true that most fruits are advantaged by close association of a number of varieties, but this need is clearer in the case of some fruits than of others. Your apricot will take care of itself, and your peaches and plums will perhaps help each other. The Mission and White Adriatic figs usually bear well without cross pollination. The almond is in danger unless you happen to have planted one of the self-fertile varieties like the Drake's Seedling and the Texas Prolific. We would advise that you bring the trees along as you have started,

and if you find later that cross pollination seems to be necessary, you can graft in a branch of some pollinator in the trees you now have, if you do not desire to increase the number of trees which you are growing in your garden.

Old and New Roses.

To the Editor: I have a number of rose bushes, at least twenty years old, and I am wondering how to treat them. Shall I take them up and cut off the long main root that they seem to have and replant them again, or are they too old? Do roses thrive in a heavy soil with sand added? When should I prune and transplant?—Amateur, Highland.

We consider a rose bush of twenty years of age of no value at all except to stay in the place where it has established itself. In that case, if still thrifty, it may be very satisfactory for years to come, but do not for a moment think of transplanting such a bush. It is much better to start with a new plant. Roses thrive usually in quite a heavy soil if kept well cultivated and supplied with such abundance of manure and sufficiency of water as their natures require. The addition of sand to prevent baking and cracking of the soil is, however, quite desirable, but the same result can be accomplished by frequent digging in of well decomposed barnyard manure which furnishes not only plant food but modifies the soil in its physical characters. Roses are pruned to advantage twice a year: in midsummer followed by good irrigation to encourage new growth for fall bloom; in early winter, to provide new wood for winter and spring bloom. The best time to transplant is early in the winter, when the plant is fairly dormant.

Wireworms.

To the Editor: We of the Sutter basin bean growers are more or less troubled with wireworms and another kind which attack our beans after they are planted. Sometimes after the plant is up they work into the stem from the ground. Planting time comes in June. Will it be worth while to spray or soak the seed in some kind of poison?—G. T., Grafton.

It is very hard to handle ground pests without trying things which will kill the seed or will cost more than the crop will justify. The way such things are circumvented is to keep changing the crops which they infest to ground not recently used for the same crop. Sometimes a very thin scattering of nitrate of soda along the proposed rows will dispel such worms. They can also be killed by poisoning things which they like, like cut potatoes or other roots, green alfalfa, etc., and burying these in the ground in advance of planting, but the cost of all this puts it in the category of garden rather than field recourses. Rotation of crops is probably the most practicable escape from such pests.

Gophers and Seed Potatoes.

To the Editor: I would be pleased to learn the best way to prevent gophers from attacking potatoes when planted.—M. J., South San Francisco.

We know no way except to kill the gophers. We know of nothing which could be added to the potato which would repel the pest without destroying the seed. The use of modern effective methods of killing gophers in advance of planting is the only thing which seems practicable to suggest.

Effects and Causes of Decayable Oranges.

[Quoted from U. S. D. A. Reports by the Citrus Protective League.]

The wholesale and retail merchants want oranges that can be depended upon to remain in sound condition.

For such fruit they are willing to pay a premium, while fruit which develops a high percentage of decay before it can be sold has nothing but its cheapness to recommend it. A grower or shipper who consigns fruit carelessly or poorly packed with the expectation that it will remain sound until it gets into the market deceives no one but himself. He may be able to dispose of a few cars at fair prices, but the buyers soon learn what to expect and prices fall accordingly. Fruit which develops a high percentage of decay while in the market is the poorest kind of an advertisement, not only for the brand under which it is packed, but also for the section of the State from which it is shipped.

The importance of having the fruit remain in good condition after arrival in market is most urgent. Carefully handled fruit which has good keeping quality will always command a premium over fruit which has a bad reputation. The former will enable buyers to break up carloads and ship sound fruit to smaller markets over an area two or three times as large, while fruit of a less desirable quality must be consumed quickly in order to avoid further serious loss.

An injured orange, whether grown in California or Florida, will decay whenever the conditions for the development of blue-mold are favorable. A sound orange in good, healthy condi-

tion, whether grown in California or Florida, is able to resist blue-mold decay, which is caused by the growth of a minute organism within the tissues of the fruit.

The blue-mold fungus has not the power to penetrate the sound living skin of a well-grown fruit; hence it is only through a break or an abrasion of some kind that the disease may find an entrance.

TYPES OF INJURIES.—The most common type of injury was made by the point of the clippers in cutting the oranges from the tree. Many of the oranges were severely injured by stem punctures, which are produced when an orange cut from the tree with a long stem is allowed to fall or roll forcibly against another fruit, while others showed scratches of various kinds and punctures from thorns. Frequently bruises were found that could be traced to rough and careless work on loading and carting the fruit from groves to the packing house and in unloading. Very often there was considerable injury that could be traced to some incidental derangement in the packing house machinery, such as a broken wire in a wash tank, a protruding screw among the bristles in a brushing machine, a nail or bolt extending into a chute or runway, or some similar defect.

Thorn punctures, which are made while the fruit is still on the tree, are among the first injuries to which citrus fruits are subjected. The puncturing which occurs when the fruit is being picked may be prevented, however, although it is frequently

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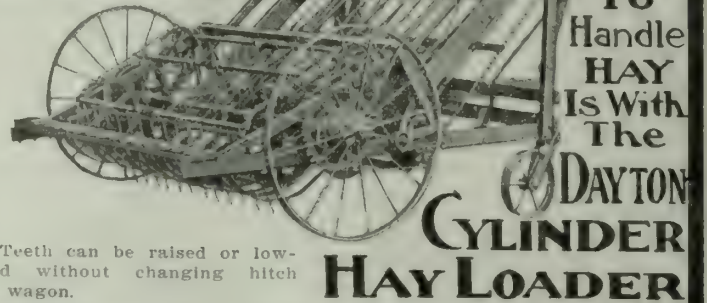
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difficult to handle the oranges with sufficient care to avoid pressure against thorns or dried twigs when these are present in large numbers. Fruit is often bruised when the ladder is placed carelessly in a tree or when the sack is allowed to strike or is pressed against the branches or ladder.

Even though the field box may be filled only to its capacity, the top fruit may be injured in handling the boxes by sliding off the top box from the one underneath—the rear end of the top box is not kept in a horizontal position and is allowed to sink down to the level of the oranges in the lower box—necessarily injuring some of the fruit.

Among the most common forms of injury may be mentioned scratches made by the finger nails of the pickers and packers, each of whom should be required to wear gloves. It is comparatively easy for packers, especially if their finger nails are long, seriously to injure a large percentage of the oranges which they handle. Some of the packers also do a great deal of harm by dragging the oranges around in the bins and by tossing the off-sizes into the neighboring bins. Abrasions due to the presence of gravel, twigs, splinters, protruding nails, or other foreign matter in the picking receptacles, field boxes, or packing bins may have far-reaching consequences.

When the blossoms are falling from the trees, a great many of the dried blossom stalks are allowed to fall into the picking sacks and boxes, and by getting between oranges or in the bottom of the box are pressed into and break the skin of the fruit.

That commercial handling may also be careful handling is demonstrated by the fact that during both seasons the average percentage of decay in the commercial fruit shipped from 12 houses using care was almost as low as the average for any one of the lots carefully handled by the bureau workers. In one packing house, where during 1910-11 the percentage of decay in the commercially handled fruit reached 15.8 per cent after holding for three weeks in Washington, the handling operations were so improved by the adoption of the bureau methods that during 1911-12 only 4.1 per cent of decay developed in the commercially handled fruit at the end of the same period.

It is possible and entirely practicable to handle an orange crop commercially with enough care to eliminate blue-mold decay.

But the simple change from the box-payment to the day-payment plan is insufficient to bring about careful work. There must be an efficient field foreman whose duty it is to supervise the different pickers and who must be capable of obtaining good work from them. He should watch carefully the output of every laborer under his charge, should follow them to see what each is doing, and should insist upon careful handling. It is practically impossible for him to carry out these arduous duties if, in addition, he must pick fruit.

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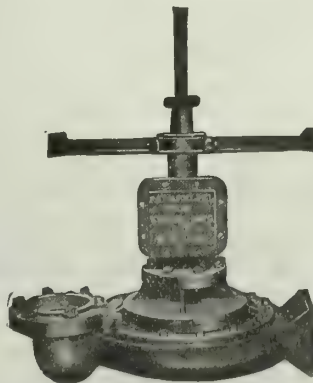
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Gopher-Girdled Trees.

[Written for the PACIFIC RURAL PRESS.]

Thirty-five 7-year fruit trees girdled by gophers and now dead or dying taught Millard Sharpe of Solano county the need of protection. His system is a perfection of convenience, cheapness, and effectiveness. Inch-wide strips of galvanized iron are fastened with galvanized nails, vertically around the trunk about two inches apart and extending from a few inches above ground to a few inches below. The pests could not kill the tree if they should try, but Mr. Sharpe says they don't try. Where they were not protected, the bark on some is cleaned off even to a short distance on the big roots.

Another system is to use wire screening which comes in rolls 6 inches wide, just well lapped around the young tree and held in place by the dirt. It will not constrict the growth of the tree.

A way to cure girdled trees if discovered when the leaves begin to turn yellow is to cut a limb an inch in diameter from a healthy tree, split it into four pieces, smooth off the sharp edge and whittle a long slope at each end where it will lie against green bark of the tree and root after dead bark has been cut away from them. It is easy thus to cross the cambium lines of the "bridge graft" with those of the tree. All four of them should be tied in place and all fresh cut surfaces covered with grafting wax. Cut the tie strings when a good union has been made.

FRUIT GROWERS' CONVENTION.

Next Monday afternoon, at the University Farm at Davis, begins what promises to be the greatest fruit growers' convention ever held.

The caliber and extent of the meeting may be judged from the fact that about 160 different speakers will be heard during the week, upon 175 subjects, in more than 200 separate addresses. Naturally no one can attend all these different lectures, and it is not the intention that anyone should attempt this. The meetings will be arranged like the classes in a university, many different subjects going on at the same time, but all under a program which allows each individual to pursue a logical course in any subject or subjects in which he is particularly interested. Thus the pear grower can study and discuss pear growing, pear blight, irrigation, pruning, and other subjects in which he is

particularly interested, while at the same time the olive grower or the packing-house man is taking up matters connected with his business.

Among interesting subjects are Deciduous Fruit; Women in Horticulture; Plant Diseases, with a special meeting on pear blight; Straight Information for New Settlers, by Dean Hunt of the University; Irrigation, Intercropping Young Orchards; Dates; Olives; Walnuts; Figs; Bees; Fruit Canning; Berry Culture and Marketing; and Frost Control.

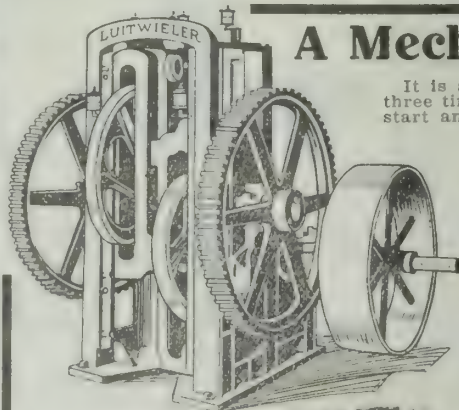
Special meetings to be held in connection with the convention are those of the California State Grange, the Farmers' Union, fruit shippers, college graduates and students from all over the United States.

PROTECTION FROM PEST-BREEDING PLACES.

To the Editor: I enjoy reading your paper very much and believe it is a great help to any person who follows farming or fruit growing. As you are old timers in this beautiful country I think you can perhaps give me a little advice. On three sides of my place the land is owned by men who do not even live in this country. These places are hotbeds for breeding hoppers and all kinds of vermin, as well as bad weeds and dead grass, which may burn me out any day. Is there any law to compel those men to cultivate their places? They are all people who can afford to care for their neglected orchards and they will not sell out unless they receive top prices. It is almost impossible for me to keep my place clear of tree diseases, insect pests and noxious weeds when I am practically surrounded with a bunch like that. If some government official was to send each of them notices that they either had to do something or get out, they would see that they would get busy, whereas if I butt in they will stand me off and do nothing.

Sacramento Valley. FARMER.

[The execution of remedial laws and county ordinances is in the hands of Dr. A. J. Cook, State Horticultural Commissioner and the various county horticultural commissioners. They are required to give attention to certain specific pests which the laws mention and they are disposed to protect people who are at the mercy of such neglectful neighbors as you mention. Write to Dr. Cook and he will tell you how to proceed toward relief.—EDITOR.]



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Panama-Pacific International Exposition Far Towards Completion.

The accompanying panoramic photograph of the Panama-Pacific International Exposition was taken April 18. At that time the Palace of Machinery—on the extreme right—was complete and nine of the eleven palaces were partly completed. On May 27 the entire main group of eight palaces and the Palace of Machinery

were declared complete and were accepted by the Division of Works from the contractors.

The Palace of Horticulture, which may be seen to the left of the picture, is now about ninety-five per cent complete and the Palace of Fine Arts is about eighty-five per cent complete. Both of these structures will be finished within thirty days.

The panorama gives one a good idea of the magnificence of the surrounding scenic features. In the background may be seen part of the 2½ mile water front of the Exposition, with the hills of Marin county on the opposite shore and the islands, crowned by evergreen peaks, scattered about the Bay of San Francisco.

The narrow passage-way of water on the left is the channel leading to the Golden Gate, the entrance to San Francisco harbor. Exhibits are now being installed in the various palaces and within a few months the Exposition will be entirely ready for the opening, although the scheduled date is not until February 20, 1915.

The narrow passage-way of water on the left is the channel leading to the Golden Gate, the entrance to San Francisco harbor.

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CULTIVATOR TREE BUFFER.

[Written for the PACIFIC RURAL PRESS.]

"Ever go through an orchard and see where the trees had been skinned by the cultivator?"

"Most of us have."

"You don't see those marks in my orchard," said P. D. Bane of Orland. "I want to show you why."

He drove up to a 10-foot spring-tooth harrow and pointed to a buffer on one end of it. A circular inch board 6 inches in diameter had been nailed on top of another of two inches greater diameter, and with the grain of the wood crosswise of the other to act as a cleat to prevent splitting. Thin cleats were nailed across the top one. Pieces of the cushion tires so common when bicycles were first used are fastened around each circle; and a hole bored through the center of the boards.

A piece of strap iron was bent so it would fasten at the ends to solid parts of the cultivator and reach over the center of the circles when they projected over the end of the harrow, where they hit the tree before anything else on the harrow. A bolt runs through the strap, through the hole in the circles, and through the iron bar of the harrow.

Whenever this cultivator would hit a tree, the rubber tired buffer wards it off and turns on its bolt as the harrow drags past, so that the tree is not even scraped by the rubber.

The shape of the iron strap will vary on different machines, but so long as the buffer projects and simply turns when it hits a tree, there will be no raw barked places to sunburn or invite borers.

It is used on only one end, for as Mr. Bane says, (and he invented the buffer) a driver gets a habit of looking to the left or right of his horses' heads when driving next to the trees on that side. A horse, driven often next to the trees gets to be pretty intelligent about it and should be kept there. For these two reasons, the same end of the cultivator is always run next to the trees and therefore only one buffer is needed.

CURING PEAR BLIGHT.

To the Editor: My 50-acre pear orchard is some 2 and some 3 years old. I have only seen the appearance of blight in only one tree, but there is

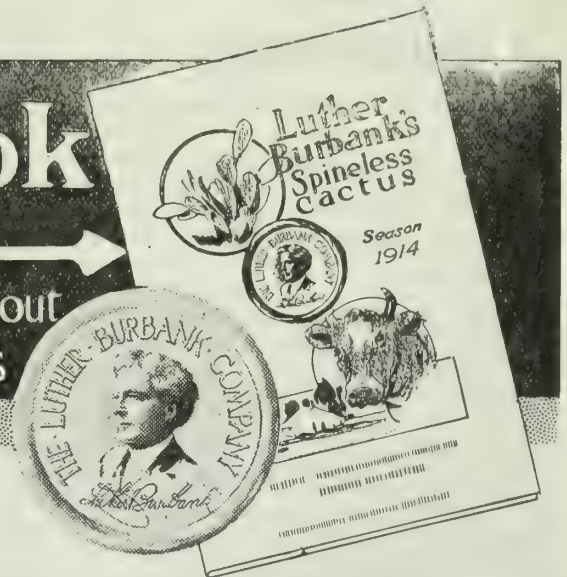
considerable blight in this community. Please tell me the best and quickest method of curing it.—I. G. Z., Colusa.

[The only way to cure pear blight is to cut out the affected twigs several inches below any visible infection.

The germs work under the bark, downward on the limbs, usually because the infection is carried by insects and finds the best chance to live in the tender shoots. If it gets into a broken place in the bark on the trunk it spreads in all directions and

all bark with some of the wood must be cut some inches beyond the last bronze red discoloration of the inner bark. Dip tools in a 1 to 1000 solution of corrosive sublimate after every cut or you will spread the disease.—EDITOR.]

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In this book Luther Burbank tells in his own way just exactly how he originated Spineless Cactus and the place it occupies among live stock forages.

It's an important thing for you to have at command the information this book contains, because it has a direct bearing upon your profits and your success. It's free for the asking.

It contains affidavits of stockmen who have fed Spineless Cactus and the results they attain—shows how dairy cows increase their milk from 37 pounds to 47 pounds in seven days—shows how eight hogs made an average gain of 14½ pounds in 22 days; an average of 2/3 pounds per hog per day.

It tells how good it is for all livestock, including poultry

This book is splendidly illustrated with actual photographs that tell a succession of fact stories.

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- how it has supplied all the water that animals need.
- the valuable fruit, rich in sugar, that certain varieties of Spineless Cactus bear.
- the kind of climate and land needed for its growth.
- full directions for growing Spineless Cactus.

Pony Refrigerators.

[Written for the PACIFIC RURAL PRESS.]

"Pony" refrigerators, each containing 10 to 12 ten-pound boxes of cherries, carried 10,000 boxes by express from Newcastle alone in 1913 to all parts of United States and Canada according to R. A. Hall of Wells-Fargo, at Newcastle. Only 4000 were handled by express outside of the "ponies." When shipments became heavy enough to send carloads to sin-

gle markets, the "ponies" were not used so much. Yet the records of A. F. Wortman, manager of the Newcastle Fruit Growers' Association, show that some of their ponies made 5 trips to the East last season, returning the last time June 23. One pony was loaded May 25 with a box from each of 10 shipping companies of Newcastle and sent to Chicago. It was returned with the fruit, arriving in Newcastle June 4, and was inspected by representatives of the companies next morning. The cherries were pronounced in fine condition and some of them were later sold in New York.

The ponies weigh 70 pounds each when empty. Expressage is 25 per cent greater than when cherries are shipped otherwise, but this cost includes icing on the way which the express company has done satisfactorily. Return charge on empty ponies from New York is 25 cents.

The season of 1912 was the first in which ponies were ever used; yet in 1913, the Association made 500 of the manager's own design, many of which were sold to the other shipping firms. A novel use for them was disclosed when this winter Industrial Manager Elliott of Wells-Fargo phoned to Newcastle for one in which to ship violets to New York.

At least one other firm in Newcastle makes ponies of slightly different design, at least two in Vacaville are using their own makes this season, and Chico is shipping in ponies for the first time. Several American river growers are also using them.

The Newcastle Fruit Growers Association has what seems to be the most convenient of all. It looks like a box 2x2x3 feet.

All of one side except the lower 6 inches comprises a door hung by three heavy hinges to open outward and downward. When closed, it fastens by two corner clasps which fit over heavy staples. Lead and wire seals through these staples prevent the possibility of stealing fruit en route. The top is entirely covered with galvanized iron so that several ponies may be piled up and the drainage from the ice boxes will not run into the lower ones.

With the door hanging down and wide open, an interior view is gained. Cherry boxes are piled 5 deep at each end, filling the pony to the top, but all very easily accessible. At the bottom and between these end tiers are two boxes of cherries; and above them is the tray on which rests the galvanized iron icebox which fills the remaining space, and holds 45 pounds of chipped ice at once. It drains into the tray and thence through a pipe which opens from the bottom of the pony. The icebox is removable for refilling en route, through a little doorway cut in front of it in the main side door. The little door is hinged, and fastens with a bolt, which makes everything convenient for re-icing without exposing the cherry boxes to view or to warm air.

The ice chest being located centrally in the upper part of the pony, secures the most even and economical distribution of cold, for the warmest air at the top is constantly being cooled. When a pony refrigerator shipment is ready, the agent wires Truckee to have chipped ice all ready for them. Being so near the Sierras, ice is not really needed on the west side of the mountains.

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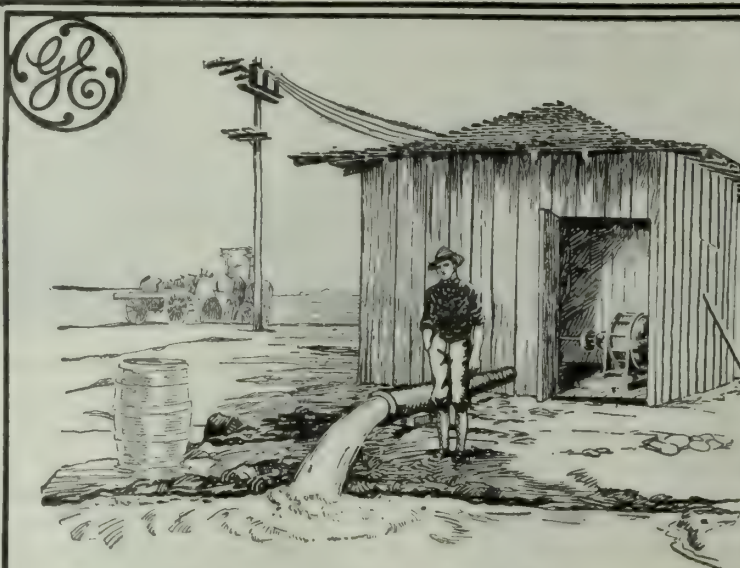
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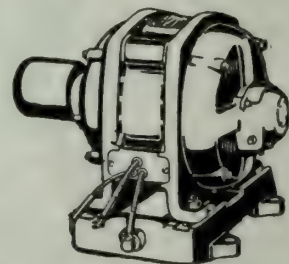
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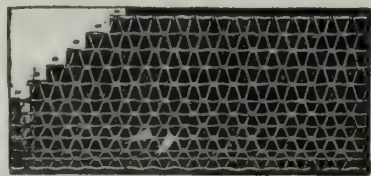
The General Electric Company will gladly answer all questions relating to the use of electric power for ranch and market garden irrigation.

Address nearest office.



4956

KOKOMO Self Regulating FENCE



STRONG Because it is made of large High Carbon Steel Wires.

DURABLE Because it is double galvanized and all wires interwoven and securely locked at each intersection.

CHEAP Because it is sold by actual weight at DIRECT FACTORY PRICES.

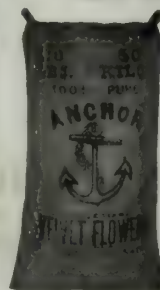
Write for catalogue and price list.

CALIFORNIA ANCHOR FENCE CO.

822 E. Main St.

Stockton, Cal.

PATRONIZE HOME INDUSTRY
Fleur de Soufre, Anchor Brand, and
Eagle Brand Flowers of



SULPHUR

Packed in barrels and double sacks are the fluffiest Sulphurs that money can buy; the best for vineyards; the best for bleaching purposes. LEAVING NO ASH. SEND FOR ILLUSTRATED BOOKLET, also PRICE LIST and SAMPLES.

SAN FRANCISCO
SULPHUR CO.

624 California St.
San Francisco, Cal.

One Man can run it.



There's a big demand for Irrigation wells throughout California and the Southwest. You can Make Big Money during your spare time with the

IMPROVED POWERS
COMBINED BORING AND
DRILLING MACHINE

Bores a 100 foot well in 10 hours. Will go through gravel, sand or clay; drills through rock. One team takes it over any road. Operated by same team or by gas engine if preferred. No tower or staking; rotates its own drill. FREE Catalog, Easy Terms.

Lisle Mfg. Co.
Dept. 3,
625 Third St.,
San Francisco, Cal.

SCALEFOE

The Best Spray or Wash for Scale and Red Spider.

SCALEFOE

Will not injure the Plant or Tree, if used according to directions.

SCALEFOE

Quart can 20c—Two-Quart can 30c—Gallon can 50c—Five-Gallon can \$2, freight prepaid. Special price for Barrel lots.

WEST COAST SEED HOUSE,
116-118 E. 7th St., Los Angeles, Cal.



DEWEY, STRONG & CO.
PATENTS
911 Crocker Bldg., S. F.
Circular containing 100 mechanical movements mailed free.

What Is Biting the Farmer?

To the Editor: Having noticed the views of the PRESS and those of some of your farmer readers on the eight-hour law, I beg permission to express an opinion on this all-absorbing topic in the hope that I might be able to divert the minds of our farmer friends into a different channel of thought, that they might be able to see some merit in the eight-hour law when looked at from the viewpoint of their more miserable brother.

This law, as we understand it, is intended to relieve the situation of those persons who go to make up the majority of our population, those persons who are so unfortunate as to have nothing but their labor power to sell and who have to have a job before they can even offer to sell their one commodity. Now, I wish to ask any fair-minded person if the farmer in all his wretchedness, with his diversity of products to sell, can compare his own miserable condition with that of the above described class which the eight-hour law was designed to benefit. It is true that farming is not a bed of roses, but what a ludicrous predicament a farmer places himself in when he sacrifices all the pleasures of life (except farming?) by working the heads off himself and family because he is afraid the world will suffer from a shortage of the earth's productions. Did such a farmer ever stop and think of the enormous waste continually going on about us as a consequence of our soul-less competitive commercial system or ever look up the enormity in increased production by the use of improved machinery. If so, he might easily conclude that something vastly worse than an eight-hour law was affecting him. There is no commodity produced by a farmer, nor

none used by a farmer, that is not controlled and priced by some one of the commercial combinations or trusts, so that every variety of fruit or vegetable or cereal and all classes of live stock that he might produce has a price fixed at which he must sell, and every variety of implement or machinery or house furnishing or building material that he might have to buy has a price fixed that he must pay. And who are his partners in business that take so much and leave so little? Certainly it is not the hired man that he wants to have work eight hours in the forenoon and eight hours in the afternoon, for three hundred and sixty-five days in the year, and who smells so strong of stables and pig pens that he has to take his meals in the men's dining room and sleep in the bunk house. And why does any farmer (who is consistently robbed by the money trust, the meat trust, the milling trust, the implement trust, the furniture trust, the warehouse and cold storage trust and all the other trusts, until he has to work himself and family to death to make ends meet) desire to go in partners with these combinations to rob the poor devil (who is a hired man only when he has a job) out of a chance to better his condition by an eight-hour law.

Now I have the misfortune of being a farmer and produce, when conditions are favorable, some almonds, grapes, apples and alfalfa, and, oh, yes! some prunes and raise draft horses, Holstein cattle, full blood hogs, Indian Runner ducks and Minorca chickens, and I do not hire any men because I can't make enough above overhead expenses to pay wages for an eight hour day and carry the necessary life and accident insurance policy on hired help. Yet

I am in favor of both and most I am in favor of any law or policy of government that tends toward the betterment of the majority of the human family which embraces the farmer and his hired man both of whom should write in a common cause against a common enemy.

We are both in the same class if we could only see it and when we combine

our crazy competitive system will soon come to an end.

Yolo, Cal.

A READER.

Several milking machines have recently been installed by dairymen in the vicinity of Dixon, Solano county. It is claimed that those who have used them have effected a big saving in the past.



Make Your Orchard Pay

Save the moisture. It means more and better fruit. Keep the ground cultivated without packing it down as fast as you stir it up. The only power that will do this *right* is the Baby Caterpillar. It does not pack the soil nor spoil the mulch around the trees. The long, wide Caterpillar tracks distribute the weight over more than 1,300 square inches. That makes about 7 pounds' pressure to the square inch—less than that of a horse or a man of 170 pounds' weight.

CATERPILLAR

Reg. U.S. Pat. Off.

The Caterpillar handles easily, turns short from one row into the next and works close up to fences and corners. Without the canopy it is only 58 inches high—you can cultivate right up under the trees without injuring the branches.

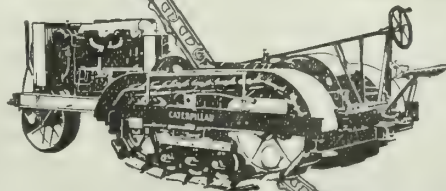
The Baby Caterpillar is *guaranteed* to do the work of 14 average horses. It has plenty of power for plowing and for hauling fruit and other produce to market. The Caterpillar tracks let no energy go to waste in slipping. They deliver more horsepower from the motor to the draw-bar than round-wheel tractors possibly can, especially in soft or wet ground.

By means of the stationary power attachment, you can use the Baby Caterpillar for threshing, sawing, pumping, grinding feed or for any belt work. The Caterpillar is a practical, all-round tractor that can be adapted to dozens of uses on your ranch. Economical of fuel, easy to operate, cheap to maintain. You ought to know about the Baby Caterpillar because of the dollars and cents it will save you if you are still working with horses.

Ask our nearest branch for catalog C 53 which will give you full information.

Everything for the power farmer—harvesters, disc and moldboard plows, harrows, scrapers, supplies and lubricants.

THE HOLT MANUFACTURING COMPANY, INC.



Stockton, Cal.
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HARNESS is expensive. The longer your harness lasts, the more money in your pocket. An occasional application of

EUREKA HARNESS OIL

keeps your harness in first-class condition—just the way it came from the shop. Eureka closes up the pores, preserves the fibre, and keeps out moisture, dust and sweat. It keeps your harness strong, flexible—jet black. It **pays** to use it. Dealers everywhere.

Standard Oil Company (CALIFORNIA)

Second Hand **PIPE** Screw Casing

ALEXANDER PIPE COMPANY

OFFICE—254 No. Point Street, San Francisco, Cal.—WORKS
1611 E. 8th Street, Los Angeles, Cal.

SURFACE IRRIGATION PIPE

GALVANIZED SHEET IRON

4—5—6 inches. 10-ft. lengths

PRICES RIGHT

201 Main St., San Francisco



PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal. Mention Rural Press.

AGRICULTURAL REVIEW.

Deciduous Fruits.

Beauty plums are being shipped from Vacaville.

The California Green Fruit Association signed up 600 acres at Dinuba, May 19, making a total of 2200 acres up to that date.

Ten cars of 1914 canned peaches are already contracted, by the Tulare County Growers' Association, to San Francisco brokers.

The Associated Raisin Co. expects to reduce the cost to the consumer and secure greater distribution, with no reduction in returns to the grower, by using fiber boxes which will cost about 20% less than the wooden ones now used and will save about \$25 a car in freight. New standards for packing raisins are also being advocated.

Santa Clara is to have a cherry carnival through the week of June 1 to 6.

Fresh fruit from the Sacramento valley is to be given away daily during the season of each variety at the Panama-Pacific Exposition to supplement the motion pictures provided by the Sacramento Valley Exposition Commission to attract homeseekers.

A small shipment of green almonds for soup making was recently sent East from Vacaville.

The Oakdale Almond Growers' Association is to pool the crops of all members, bleach and market them. This is one of the new locals of the State Almond Growers' Exchange.

The Sacramento season for canning Royal Anne cherries began last week.

Canning peaches in the San Joaquin valley are being contracted at \$20 for orange clings, \$22.50 for Phillips, and \$25 for Tuscans. The crop is good.

Yolo county made a large apricot shipment East last week.

Cherry canning commenced in Nevada county this week. Growers get 3 to 5 cents per pound.

Apples are a normal crop in the Northwest up to date. A detailed system of estimating the crop is to be modeled after that of the Yakima Valley Fruit Growers' Association.

Cherry growers of Sonoma county whose Royal Annes and Centennials were ripening have lost most of them by cracking, due to the recent rains. Placer and Nevada counties were not damaged, nor was Santa Clara.

Tree shipments into Chico the past season show 55,800 prunes, 29,600 almonds, and smaller numbers of peaches, olives, oranges, and pears.

The Ventura County Cured Fruit Association has been incorporated.

Canada packed almost 3,000,000 barrels of apples last year.

Daily green fruit specials will be run out of San Joaquin valley on the Santa Fe and Southern Pacific, taking 6½ days to the Chicago market.

The Cured Fruit Exchange is reported to have sold its entire estimated product of dried fruits of 20,000,000 pounds to the U. H. Dudley Co. of New York.

S. O. Walker is the new secretary of the Cured Fruit Exchange, taking the place of J. W. Jeffrey, who will devote his time to organization of new locals. No business manager was chosen at the annual meeting held last week in Sacramento.

Citrus and Olives.

The Citrus Protective League of California has just issued a bulletin

showing a formidable array of substantial achievement during the eight years since it was organized. Freight rates East were reduced 10 cents per hundredweight; refrigeration rates on a car of 27,650 pounds have been retained for cars of 32,000 pounds; Supreme Court victories have been won in holding the lemon rate down to \$1 per hundredweight, by which \$845,000 will have been refunded by railroads to growers, and in giving the shipper a right to pre-cool oranges and pre-ice them for \$7.50 per car with no re-icing on the way. This saves about \$22.50 per car. The League has been on the job when tariff tinkering was threatened and has prevented free trade. It has been a leader in regulating shipment of green oranges, in securing provision for a southern citrus experiment station of the University, in fighting the white fly and orange decay, in encouraging home manufacture of citrus by-products, and the protection of groves from frost. Citrus information has been collected and published in many bulletins. The total cost of the organization has averaged 60 cents per car per year as shipped by its members.

Small Fruits.

Loganberries were shipped from Sebastopol last week and carloads of berries have gone this week, earlier than usual.

Boys from the San Francisco Boys' and Girls' Aid Society will encamp as usual for berry picking near Sebastopol, June 5.

April shipments of raisins from California were 2730 tons. About 24,000 tons are still on hand.

A large crop of table grapes has set, the estimate of C. E. Virden being 8000 cars.

General holding back of green and immature grapes from shipment out of Imperial valley was arranged by the State Viticultural Commissioners, who went to the valley to meet grape growers there for this purpose.

Grain and Hay.

A rice growing experiment is being tried on 60 acres of thin land near Corcoran.

Over 4000 acres of rice has been planted in the Gridley district. Much of it was sown early on account of poor results last year with late sowing.

The Simon Newman Co. has ordered over 1,000,000 grain sacks, and Miller & Lux go them half a million better. Barley harvest has commenced and the crop is big. Tulare county expects big yields of barley.

Imperial valley is beginning heavy grain shipments.

Sonoma and Yolo counties lost considerable hay in the recent rains.

Eastern Nevada ranges are in fine shape.

Vegetables.

U. S. Department of Agriculture figures show the average price paid the farmers for potatoes, May 1, 1914, was 71.4 cents per bushel, a gain of 23.2 cents or 48%.

Iceing and freight accommodations are being rushed for Imperial valley cantaloupes.

About 40,000 cans of peas are being put up at Oakdale daily and will continue till late in June.

Lowest Prices on All Sizes

Duck Irrigation Hose Canvas Wagon Covers Tents Grain Bags and Twine

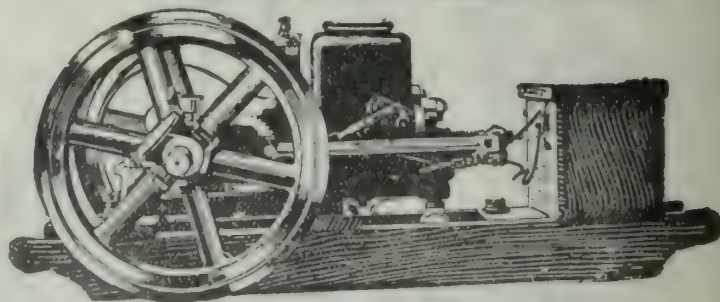
Write for Catalog and Discounts

W. A. PLUMMER MFG. CO.
37 FRONT STREET San Francisco, Cal.

A Gasoline Engine for \$37.⁵⁰ "The Hired Boy"

The number of light labor saving machines for farm and kitchen use is steadily growing. Chief among these are Washing Machines, Cream Separators, Churns, Emery Wheels, Oil Pumps and Grind Stones. All these machines require a very light power. The average small engine heretofore sold for this work has been too heavy and too hard to operate, also being too high in price to be really satisfactory. With these facts before us, we offer you "THE HIRED BOY" to lighten the load of every farmer and his wife. A woman or boy can start and run "THE HIRED BOY" without trouble. They can keep him in the kitchen if they like. He has a splash shield and wall pan, and will not dirty the floor or spot the walls.

1½ H.P., 3¼ x 4½ stroke, 500 revolutions per minute.
Weight, 250 pounds. PRICE, \$37.50.



We have just issued a new Catalogue of 368 pages of General Merchandise. It will be sent to you on request. Also request our Special Poultry Supply Catalogue and Special Rug Catalogue. We issue a Grocery Bulletin every 60 days. All catalogues sent on request only.

Pacific Coast Mail Order House

229-231 So. Los Angeles St.

LOS ANGELES, CAL.

Fertilizers and Irrigation.

Nitrate of soda purchases from Chile by the United States in the fiscal year 1913 reached a high level—\$20,718,968, against \$15,431,892 in 1912.

The rock phosphate production of Florida in 1913 exceeded that of any previous year, being over 2,500,000 pounds.

The sale of too much irrigation water by the companies supplying Fair Oaks threatens to run them short

and the Railroad Commission is helping to obtain relief.

The gates of the Lahontan dam in Nevada were closed recently; and for 1914 the capacity will be about 40,000 acre feet. Dam building will proceed until the capacity is 290,000 acre-feet.

Various Notes.

Better late than never to spray for the grape leaf hoppers which have appeared about Fresno. Use black leaf

emulsion sprays, reaching every part of the under sides of the leaves.

Alameda county recently voted the expenses for a farm adviser, to begin work July 1 if the proper man is available.

Moving pictures of the Sacramento valley are being taken to be shown at the World's Fair.

The State Fair of Nevada will be held at Reno, September 21 to 26, to follow closely the California fair. Premiums will amount to \$5000. Live stock will be a leading feature.

A wine cellar is being used for mushroom beds at St. Helena. There are 30 beds each 58 feet long.

Atwater shipped 1500 pounds of garlic to Eastern markets last week, receiving 10 cents net. The crop in this district is estimated at 50 tons. The onion crop is rather light.

WEIGHT OF PACKAGES.

To the Editor: Would you kindly give any information you can in regard to the net container law. Does it apply to the fruit and berry grower? As for instance: berries shipped in crates of 12 baskets of about 2 pounds weight each or in chests containing about 50 pounds berries. Would it be necessary to stamp each basket or only contents of entire crate or chest, also how about boxed apples?—M.O. D., Sebastopol.

[Whenever any commodity intended for human food is sold in any receptacle except when weighed or measured in the customer's presence, the net quantity of the contents shall be plainly marked on the outside of the container or on a tag attached to it and the words "net contents," "net weight," "net measure," or "net count" shall appear as a part of such designation. If the package is sold for less than 11 cents at retail, the law does not apply. Each berry crate must be marked, but not individual baskets which will retail at less than 11 cents.—EDITOR.]

STARTING BERMUDA GRASS.

To the Editor: Will you inform me how to start Bermuda grass to growing? Whether from the seed or the slip. Is it necessary to cultivate the ground? If it is started from the seed, where could I get some?—C. E. C., Tuolumne.

[It is easiest to start Bermuda with root-pieces, which can be scattered and harrowed-in; or they may be dibbled in at intervals of a couple of feet or so. This can be done at any time when the soil is warm and moist. But be sure you wish to have Bermuda as a constant tenant before you do it.—EDITOR.]

HOW THE 8-HOUR PROPOSITION STIRRED A FARMER.

To the Editor: Thanks for publishing my humble and somewhat crude attempt, which was my first at expressing my thoughts on the eight-hour amendment.

The provocation is sufficient, you will agree with me. When any class trespasses on our rights with the idi-

ORANGE SEED

Just received a large shipment of Florida Sour Orange and Grape Fruit Seed. Write for prices.

THEODORE PAYNE,

345 S. Main St., Los Angeles, Cal.

The Only Scientifically Constructed Surface IRRIGATION PIPE Is the AMERICAN

LOCK SEAMS WITHOUT RIVETS. NO ROUND SEAMS TO LEAK.



Will outlast any other pipe made—easily handled—best for irrigating alfalfa. (We make and recommend Riveted Pipe for underground use only.) Write for illustrated Catalogue, Irrigation Folder, and ask us "How to Test Pipe."

AMERICAN STEEL PIPE & TANK COMPANY

Branch: 1228 "H" St., Fresno

LOS ANGELES
354-56 Pacific Electric Building

otic and uneconomical proposition of squandering a portion of the only heritage given us, which is the time allowed us in our part of the universe, it is ample provocation to cause a rather unobtrusive individual to "speak right out in meeting."

The writer does not wish anyone to injure himself by overwork, but he does wish every rural mail carrier were compelled by law to leave a copy of the PACIFIC RURAL PRESS in each box on his route, with the proper recompense to the publisher, however.—L. B. JOHNSON, Elk Grove.

[We are glad the occasion forced you to break silence. It is surely enough to make all farmers cry out. And if the farmers get sufficiently aroused on the subject it will be drowned next November.—EDITOR.]

SWINE BREEDERS TO MEET.

Secretary J. I. Thompson, of the California Swine Breeders Association, has sent out notices that the regular annual meeting will be held at Davis, Yolo county, Tuesday, June 2, at 10:30 a.m. This association was organized a year ago with the object of more and better hogs, and since its start has more than doubled its membership.

There is a vast amount of work that this association can do toward the betterment of swine in the State. With their increased membership and the support of all who have the interests of well bred stock back of them, the association should now take up some active campaign toward the accomplishment of the aims before outlined.

A good start is to be made along this line in an effort to make the swine exhibit at the Panama-Pacific Exposition of greatest value to the State. It is to be hoped that swine breeders will attend in large numbers, and that some good plan of action will be outlined.

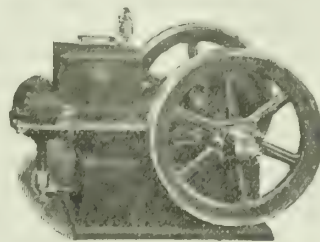
MOVING LARGE ORANGE TREES.

Current telegrams state that multi-millionaire F. F. Peabody of Chicago and New York is astonishing Santa Barbara by actually moving a fifteen-year-old orange grove, tree by tree, from this city to his new winter home place on the summit of Eucalyptus hill, five miles distant. A small army of men is engaged. Many palms fifty feet high will follow the orange trees to the new site.

"We'll crowd fifteen years' growth into one month's work, cost what it will," were Peabody's instructions. Local horticulturists declare the undertaking is unparalleled in the way of moving large trees.

Alpha Gasoline Engines

Sizes
from 2
to 100 H. P.



Portable
or
Stationary

NO WORRY

NO BOTHER

NO TINKERING

THE ALPHA GAS ENGINE doesn't need a skilled mechanic. It is so well built that it plugs right along like a steady well-broken horse.

THE ALPHA IS A GOOD ENGINE for any purpose, and because there is no mystery in either its construction or operation, it is an ideal engine for ranch use.

IT ISN'T BUILT OF ROUGH castings and bolted together. It is made from the best of material, and the workmanship and design are high grade in every particular.

THE ALPHA ENGINE STARTS AND RUNS on a slow-speed, high-grade, built-in magneto, which is a big item as it means no batteries, no coils, no troubles.

Every rancher needs an "Alpha."

Write for illustrated Alpha catalog B.

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St.
SAN FRANCISCO

1016 Western Ave.
SEATTLE

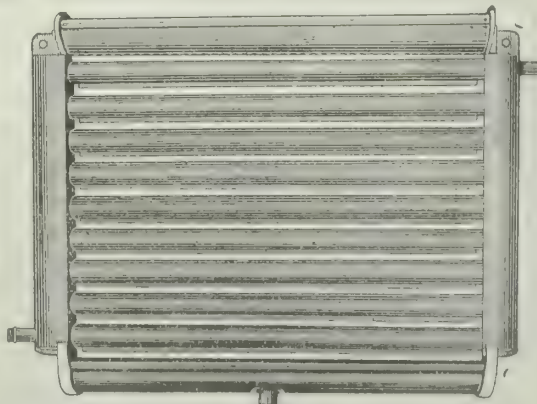
WE MANUFACTURE THE IDEAL GREEN FEED SILO

HAVE YOU A
COW?

HAVE YOU A
CREAMERY?

HAVE YOU A
CHEESE FAC-
TORY?

Yes, Mr. Dairy-
man, we can save
you money on a
Milk Cooler.



We not only sell Milk Coolers, but we are also the largest manufacturers of Milk Coolers in the Southwest. Why pay freight from the East and a middleman's profit when you can patronize home industry and save 40 per cent?

Kelsey Tubular Milk Cooler

is made in all sizes, composed entirely of copper and brass, well tinned and will stand 100 pounds pressure. It will cool the milk to within one degree of the temperature of the water and is highly endorsed by all sanitary official experts.

Kelsey Copper Tubular Coolers are made in all capacities. Efficient, sanitary and very durable.

The Kelsey Copper Cooler has a capacity of 35 gallons per hour and will cool milk within 1 degree of the temperature of the water.

Write us for further information and prices.

Guy T. Kelsey Company

106 East Eighth St., Los Angeles, Cal.

Best Milk at Minimum Cost.

(Continued From Page 613.)

drainage, and this was provided by laying a well-drained concrete floor. With the installing of ten steel stanchions and the applying of a few coats of white paint, the expense of the milking quarters was completed, and at a very moderate cost.

As there was already a well-drained cement floor in the older barn, on one side, no alterations were made, except to add a cement floor to the other side and to install water pipes throughout the two buildings for cleaning purposes.

The reason for even this small expense was that, while Mr. Newman did not agree with all of the provisions laid down by the medical commissioner, he readily agreed that one of the fundamentals of pure milk production was to milk in a building separate from where the feeding was done and to wash the dirt from the cows before milking. All of this work was done in a somewhat crude way, mechanics having of necessity been eliminated on account of the cost; but the home-made buildings are still being used, without change from the first plan, except for the enlargement of the feeding and washing barn for a larger herd.

At the milk-house the same ideas of economy and simplicity were practiced, the former pump-house being used for housing the boiler, motor, and ice machine. This house had been

built of 1 by 12 rough pine lumber, for economy; and further additions to accommodate the refrigerator, bottling machine, and sterilizing vat were made of the same material. A cement floor was laid, having good drainage, and one partition erected between the bottle-washing room and the bottling-room.

Even by economizing in every possible manner, the cost of machinery and lumber ran into a total of over \$2,000, and—to again quote Mr. Newman: "That meant disaster to us, with our badly bent pocketbook, unless we found a ready market for our milk at prices somewhat higher than ordinary milk was sold for, which was and still is \$2.50 per quart per month." An added expense which had been indulged in before, but nevertheless an investment to be charged against the product, was the cost of testing the herd for tuberculosis, and of weeding out the reactors—a task which has been regularly performed since then and one on which much emphasis is placed, even though neither the intradermal nor the subcutaneous tests have always proved reliable. By testing every animal before she comes on the ranch, and immediately disposing of any that react, the herd, which is of mixed breeds in order that a highest milk may be secured, is as free from tuberculosis as any herd may be with modern methods.

With a healthy herd and a sanitary outfit, the only question was a market, and here great difficulties were encountered, for the medical commission refused to certify the plant, and, anyway, it was only planned to sell the milk for \$3.50 per quart per month, instead of \$4.50 as desired by the commission. On the other hand, the wholesale dealers did not offer any encouragement, as the best they were willing to pay was 12 cents per gallon, and that was impossible from the Newman brothers' standpoint. Finally, things got so desperate that, as a last chance, it was decided to put that pure, sweet milk into the hands of the consumers in spite of the middle dictators, and with that end in view an attractive little pamphlet explaining the aims, quality, etc., of Newman Brothers' guaranteed milk, was sent to each of some 600 families in Sacramento who would be the most likely customers. It will be noticed that the word guaranteed was used—well, that was, and still is, exactly what was meant. If for any reason the milk is not satisfactory, the customers' money is refunded—a thing which has never yet been necessary. After these circulars had been mailed, the orders soon started to come, and have increased to such an extent that, even with 60 cows instead of 20, which was the number milked at first, the trade cannot be supplied; and a waiting list has been made. The delivery problem has been solved by hauling the milk to town in an auto-truck, which makes but one delivery a day. Two one-horse wagons distribute the milk in one trip daily. Perhaps the reader will be surprised at the above statement regarding the one delivery a day, but only one is necessary on account of the purity of the product handled. To show how badly tradition was treated in this respect, Mr. Newman told us of a number of his newly made customers who at first did not like his

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop., DAVIS, CAL.

Breeder of

Short-Horn Cattle, Shropshire and Merino Sheep

Offers for Season of 1914 an exceptionally fine lot of Purebred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.



"Hillcrest Lad"—First Prize Ram at State Fair, 1911.



San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—Five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

America's Leading Horse Importers

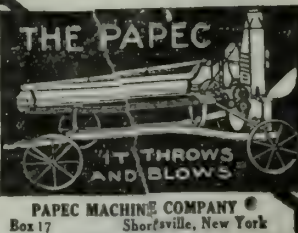
PERCHERONS



"Our recent importation arrived at our Oakland stables March 1st. This shipment comprises the best lot of stallions ever shipped to the Pacific Coast. Every horse in the lot is sound, young, stylish and of the best conformation. AT the INTERNATIONAL LIVE STOCK EXPOSITION, Chicago, December, 1913, our stallions won two Gold Medals, two Championship ribbons, two Second Prize ribbons, and other honors.

If you want the BEST let us hear from you.
McLaughlin Percheron Company
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Fills Your Silo Quickly With Less Power and Labor
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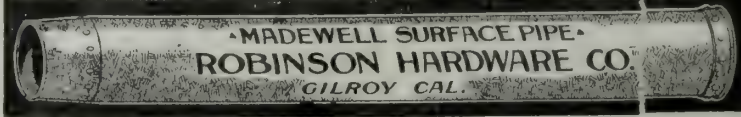
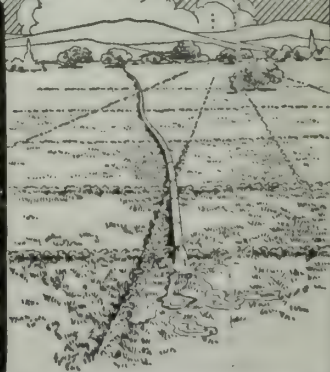
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manner of distribution; for they said: "You deliver us yesterday's milk today, about 11 or 12 o'clock, and we don't use it until tomorrow, so it is over 48 hours old before we use it. We do not believe that it is possible for such milk to keep sweet such a long time." Seeing is believing, however, and now all of the customers have implicit faith in any milk brought from Mr. Newman's wagon.

To further show the keeping quality of the milk, the manager told us of a more recent case where one of the baby customers moved to Placerville for three weeks and requested that her milk be shipped by express. For the three weeks of her visit, four bottles of milk were sent every fourth day, thus making the milk five days old before it was used, when it was found perfectly sweet and all right, even though it had not been on ice since its delivery to the express office.

This and similar experiences seem to bear out Mr. Newman's theory that there really is no souring possible in pure milk. So long as the bacterial content is kept below 1500 per cubic centimetre, as it has been most of the time since the selling of whole milk was started, it makes little difference whether the buildings are things of beauty and expenditure.

To the average dairyman the bacterial test of his milk cuts little or no figure, but not so here; in fact, this test is in reality the barometer of all work done; for it is through this test that any flaw in the workmanship is discovered, and a high count means much investigation all along the line, as well as considerable gloom on the part of everyone, from the boss to the fellow who pulls the teats. The idea that hired milkers would take such a deep interest in the quality of the product may seem like an exaggeration, but the fact is that the boys (as we were taught to call them, instead of "hands") form

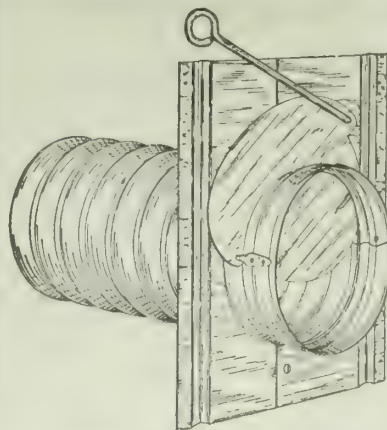
a large part of the conscience and individuality of the plant, which would without them be a flat failure so far as pure milk is concerned. The secret of this success with the boys is that they are well paid, fed, and housed, and treated with respect. A new house is to be erected this year for these men, who are the custodians of the bacteria count, since the city customers have demanded practically all of the owners' time and attention.

Having said so much of these milkers, and having told of the equipment with which they do the work, the question naturally arises, "What do they really do so different from others?" Now, as a matter of fact, they do about the same things that are done in many of our city milk dairies: First, the cows are hosed off in the feeding barn and any remaining dirt scrubbed; their tails are kept docked all of the time, as otherwise they would switch small particles of dirt at milking time; their udders are clipped of the fine hairs, although "this is done more to satisfy the whim of the inspectors than for the real good that comes therefrom." It is Mr. Newman's opinion that, no matter how much washing is done, more dried particles of skin and other dirt fall during milking time when there is no hair on the udder to catch it, than when the animal is unclipped.

After washing, they are driven into the milking barn, which is thoroughly cleaned out by flushing after each string of ten is milked. The milkers wear white overalls and jumpers, and use a no-seam bucket having a heavy grade of cheesecloth for a strainer, which is changed after each bucket of milk is carried to the milk-house. These cloths are sterilized after using and kept in an enclosed pail until used again. The milkers wash their hands after milking each cow and thoroughly dry them on clean towels. Each bucketful of milk is carried directly to the milk-house, where it is poured through the outside wall into a small metal tank inside of the bottling room. From the small tank it is run over an enclosed milk cooler in which brine from the refrigerator is circulated, and goes from there to the bottling machine. This machine fills a number of bottles at one operation, the bottles being taken directly from the crate and put under the capping machine which hermetically seals them with a metal cap. After this the bottles are put into galvanized-iron cases and set into the refrigerator, where the temperature is kept at or near freezing, until the next morning, when they are iced and put on the auto-truck for town.

It is the care exercised in handling the milk that enables the Newman family and the boys to smile when the bacteria tests of Sacramento dairies are published. Their milk has shown as low a count as 280, a product that, the city chemist added in his report, "was surgically pure." Now we saw the reason for so much stress being laid on the milkers, for it is not so much what they do that is different, but the way they do it.

"Does it pay?" was our parting question, and we were immediately informed that it does. "Pays a bigger interest on the investment than we could ever hope for by selling either certified milk or butter-fat. Besides, there is much satisfaction in knowing that we are really benefiting others as well as ourselves through the production of a pure foodstuff."



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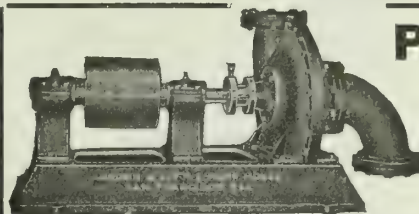
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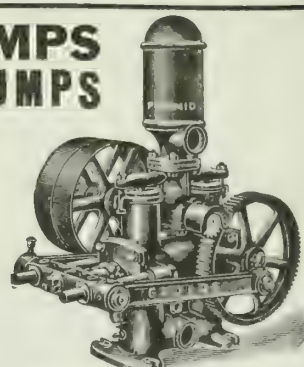
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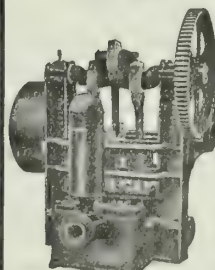
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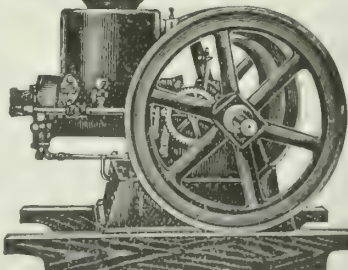
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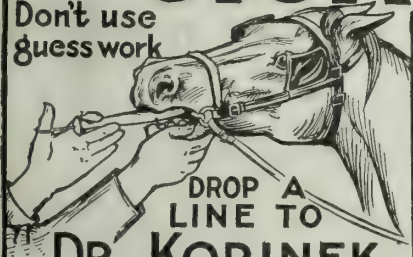
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With the Live Stock Men.

The Tulare County Cow Testing Association have just finished their second year's work and have met with such marked success that plans are being made to either start a second association or provide an assistant tester to work in connection with Alex Rousseau, the tester for the present association.

The Adams-McGill company, of Ely, Nevada, have shipped the last of their spring wool clip, which weighed about 240,000 pounds and was valued at \$40,000. The quality of the wool is said to have equaled that of the Montana clip and to have brought an equally good price.

John Daggs, the Duroc-Jersey hog breeder of Modesto, writes that he will show at the Sacramento fair this year, where he will have a strong representation of the red hog. He is also planning on showing a good bunch at the Panama-Pacific Exposition in 1915.

Thornton S. Glide, the well known Shropshire sheep and Short-horn cattle breeder, states that during the past season he has sold over 150 bulls and that the demand for Shropshire bucks has been especially good also.

Work on the new milk-canning establishment which is to be built at Newman, Stanislaus county, by the Central California Creameries, will be started at an early date and present plans are for a larger factory than had at first been hoped for.

The pure-bred Swiss Toggenburg goats which are being raised at the University Farm at Davis are doing exceptionally well. One of them is now giving 70 pounds of milk a week which tests 4.2 per cent and experimental work is being carried on to see if goats are as economical as dairy cows.

John Arfman, of Middletown, N. Y., is reported to have sold a half interest in the Holstein bull King Segis Pontiac Acarta for \$25,000 to the Lawson Holding company, of New York. This is said to be the highest price ever paid for a dairy animal.

Several cases of anthrax have been reported near Dinuba, among dairy cattle, and as a result six head have been killed by veterinarians.

Messrs. Dougherty and Sinai, of Lodi, recently shipped six well bred, heavy horses to Yokohama, Japan. The purchasers are a wealthy firm of that city and it is thought that quite a trade will be built up if the shipment proves satisfactory.

A cable dispatch states that recent rains in Australia have insured abundant food for live stock for a number of months, and that sheepmen are undecided whether to raise sheep for their fleeces or for food purposes.

K. H. Dorsey and C. D. Wright, who recently purchased the 189-acre ranch of George Marting, near Perris, Riverside county, are expecting to further improve it and start a first-class dairy.

A meeting has been called at Washington, D. C., June 2, 3, and 4, for persons interested in the sheep and wool industry. Among the topics to be dis-

cussed will be the improvement of farm and ranch methods of handling wool; the possible adaptation of foreign methods to American conditions; the standardization of the wool clip; and the prevention of damage by dogs and predatory animals.

The Churchill creamery, at Fallon, Nevada, churned during the month of April 18,200 pounds of butter which was sold to markets in that State. A report from Gardnerville states that the creamery at that place has been closed after disbursing over one million dollars to dairymen in the Carson valley.

Reports are to the effect that the Government is finding it difficult to purchase a sufficient number of horses for its present needs, and that as a result, stations will be established in California, Arizona, and Nevada, because horses from these States are fitted for the work better than those from other States.

C. C. Potter, of Stratford, Kings county, recently purchased 28 head of fine grade dairy cattle from Joe Morrison, of Tulare. The price paid was said to be high.

Cattle prices at the Portland Union Stock Yards for the past week were steadier and further declines were not registered. Best light hay-fed steers sold for \$7.50 to \$7.75; good cows, \$6.50 to \$6.75; all other cattle prices being equally steady. Grain-fed steers at 8c featured the early week's market.

Live Stock Directory

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CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE MCCLLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

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I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

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TWO HOLSTEIN BULL CALVES—Prices very reasonable. Cooley Bros., Durham, Cal.

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S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

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DON'T FORGET

Geo. A. Smith's First Sale of Registered Holsteins.
Corcoran, Cal., Tuesday, June 16, 1914.

PLANT THE SEED OF GREAT PRODUCERS and RAISE A CROP OF GREAT PRODUCERS. A GOLDEN OPPORTUNITY to secure some of the best blood the breed affords at BIDDERS' PRICES. Head your Herd with a Grandson of KING SEGIS—83 A.R.O. Daughters—the first sire to sell for \$10,000, and sire of more Jr. 2-yr.-old 20-lb. daughters than any other one sire; Grandsons of PONTIAC KORNDYKE, 81 A.R.O. Daughters, 3 of which have made WORLD'S RECORDS, sire of more 30-lb. daughters than any other one sire and grand sire of the WORLD'S CHAMPION, K. P. Pontiac, 44.18 lbs. Butter in 7 days; Grandsons of HENGELVELD DE KOL, 116 A.R.O. Daughters—8 above 30 lbs., 78 above 20 lbs. of Butter each in 7 days.

COWS with Official Records—COWS now on Year's Semi-Official Test and making good records—HEIFERS BRED to one of the best bulls in the West who sold for \$1250 when a calf—HEIFERS not bred—HEIFER CALVES and BULLS of all ages from 4 months to 4 years.

HOLSTEINS WITH TYPE—GREAT PRODUCTION and PREPOTENT BLOOD. WHY RAISE SCRUBS when the cost of raising pure-breds is no more? Will scrubs pay at the present prices of butter-fat? THERE IS MONEY IN HOLSTEINS FOR YOU—they are going higher all the time. You can START RIGHT with a young bull and some heifers or a few bred heifers that will not cost much and within a year they will be cows worth double what you paid for them. GET A FEW MONEY MAKERS. This is your chance to secure Blood that has produced WORLD'S CHAMPIONS. WRITE at once for SALE CATALOGUE and read all about them.

GEO. A. SMITH, Corcoran, Cal.

Although there was a liberal run of swine, prices held steady, the best grades of light hogs selling at \$8.25 for tops. Mutton receipts were smaller, best grade valley yearlings sell-

ing for \$5. Spring lambs sold at \$6.60, but showed a decline from this price later in the week. The firmest class in the sheep division were ewes, which sold steadily at \$4 to \$4.25.

Ideas of a City Draft Horse User.

One of the most interesting as well as the most instructive addresses made before the recent meeting of the Draft Horse Breeders' Association, at Davis, was that by Mr. James McNab, of the firm of McNab and Smith of San Francisco.

Although this firm is perhaps the largest user of heavy horses in the city of San Francisco, through their extensive business of heavy draying, they have used the horse for their heavy hauling almost to the exclusion of other forms of power, and in giving his opinion on the future of the heavy horse and the motor truck Mr. McNab had the following to say: "While the motor truck is a convenience and a great help in doing particular kinds of work it will never allow us to dispense with the services of the horse. In special work, where long distance or a heavy grade cuts a figure, the motor truck has advantages over horse power, but in the ordinary work of the trucking business conducted in a general way, which is the hauling of freight between railroad depots, stores, and wharfs, the motor vehicle has never been a success alongside of the horse-drawn vehicle, and we look to a continued need for an extended use of horses in our business."

Mr. McNab also stated that his firm have had to import carloads of heavy horses from Illinois and Iowa in recent years, on account of the shortage of horses in California which have the size, bone, conformation, and general type of draft animals. He further continued: "It is a common saying among horsemen on the farms that a 1400 or a 1500 pound horse is big enough for anybody and that the bigger they get after those weights the poorer the quality. If this is the case the fault lies with the kind of horses that are being bred. A good big horse should be just as good as a good little horse, provided he is an animal of the breed suitable for the work that he is intended for. Breed for the big horse, you will always get plenty of little ones."

In regard to the best breed, Mr. McNab related how he had made a trip to Europe some years ago and stated that in those countries he found the Shire, Clydesdale, and Belgians mostly used for heavy work; but one noticeable feature was their good bone and conformation as well as size. In judging work-horses there, he did not find the preference for solid colors that exists in this State. He stated his reason for this preference of solid colors was the appearance, telling how a well fleshed, solid color made a good impression, while a well fleshed spotted animal was apt to look rough and poorly kept. "The difference in the breeds at this time," he continued, "in my opinion is more in the individual animals than in any great distinction in the breeding. You cannot have a good specimen of a draft horse, no matter how much he may weigh, unless the bone coupling and girth is in proportion to the size of the animal."

The first mares brought over the plains by the early settlers were sold, largely, to ranchers in the Sonoma,

Livermore, and Santa Clara valleys. The first imported stallions were of the Clydesdale breeding, followed closely by a Shire stallion, which was taken to the Santa Clara valley. This was in 1861 and the cross of these horses with American mares gave wonderful progeny, there being a number of them scattered over several sections of the State by 1866. This cross turned out draft horses just about as good though not so large as we have at the present time.

"As soon as the colts from this stock were big enough," he continued, "they were supposed to be old enough and were put in general use in San Francisco, many of them too young. The bigger the horse is to be the longer he takes to mature; and for our use we do not put a horse down to his hardest work until he is six or seven years old. Those colts being big and apparently fit, at three or four years of age, were at once put to work upon the streets of San Francisco; and being immature did not give good satisfaction."

The continued breeding of this stock seemed to develop a coarse, hairy, undesirable animal so a number of farmers in Sonoma county purchased a fine specimen of the gray, heavy boned Norman horse; and this, crossed with the mares above referred to, resulted in the foals being probably as fine specimens of draft work-horse types as we have ever been able to get.

The success with this cross led to a great importation of Norman and Percheron stallions; and while the result for some time was very gratifying, the continuous breeding and carelessness in the selection of a number of the horses imported, resulted in the horses beginning to lose bone. The colts developed into horses of all the weight required; but there was a defect in the lightness of bone in the limbs that made many of them useless for the city work.

Since that time more or less success has been made in the breeding of heavy horses, this being more noticeable on high dry lands, rather than upon low irrigated sections, for in the latter places they did not have feet that would carry them on the city streets.

Mr. McNab stated that his firm was glad to see of late years an evident desire on the part of farmers to raise good draft stock. There have been many importations of first class stallions and a little attention should soon restore the breeding of work horses to the place it once occupied. He also said that "a good draft horse is always saleable at a good price, but you must never forget that a draft colt is a big, soft boned, helpless animal when young and cannot stand the hardship of the small type of horse. It is absolutely necessary that a draft colt have plenty to eat the first two winters of his growth. It doesn't have to be expensive feed; if they can run to a straw stack they will make out on it—but if stunted at that age, they can never recover."

In closing his remarks Mr. McNab stated that he has often wondered why farmers do not take the interest in

Seeing the Difference Between the DE LAVAL and other Cream Separators

IT DOESN'T TAKE AN EXPERT KNOWLEDGE OF mechanics or a long working test to tell the difference between the De Laval and other cream separators.

ON THE CONTRARY, WITH A 1914 DE LAVAL MACHINE placed beside any other separator the difference is apparent at first sight to the man who never saw a separator before.



IF HE WILL THEN TAKE FIVE minutes to compare the separating bowl construction; the size, material and finish of the working parts, particularly those subject to wear and requiring to be occasionally taken apart and put together; the manner of oil-

ing, and everything which enters into the design and construction of a separator as a simple durable machine, he will still further see the difference.

IF HE WILL GO A step farther and turn the cranks of the two machines side by side for half an hour, particularly running milk or water through the bowl, he will see still more difference.

AND IF HE WILL take the two machines home, as every De Laval agent will be

glad to have him do, and run them side by side in practical use, the De Laval one day and the other machine the next, for a couple of weeks, he will see still greater difference in everything that enters into cream separator practicability and usefulness.

THE MAN WHO TAKES EVEN THE FIRST STEP INDICATED in seeing for himself the difference between the De Laval and other cream separators doesn't put his money into any other machine one time in a thousand.

THE COMPARATIVELY FEW BUYERS OF OTHER SEPARATORS are those who merely read printed matter claims or listen to the argument of some dealer working for a commission, and who do not think it worth while to see the difference for themselves.

THE WISE BUYER OF A CREAM SEPARATOR TODAY does see this difference when buying his first separator, while the unwise or careless one usually finds it worth while to do so when he comes to buy a second separator a year or two later.

EVERY DE LAVAL AGENT CONSIDERS IT A PRIVILEGE to show the difference between the De Laval and other separators, and to afford every prospective buyer the opportunity to try out and prove the difference to his own satisfaction, if on first examination he feels the slightest doubt about it.

THAT'S THE REASON WHY FOUR BUYERS OUT OF five are buying De Laval Cream Separators in 1914 and why the use of De Laval machines will, before long, be nearly as universal on the farm as already is the creamery and milk plant use of power or factory separators.

DE LAVAL DAIRY SUPPLY COMPANY

165 Broadway
NEW YORK

101 Drumm Street
SAN FRANCISCO

1016 Western Avenue
SEATTLE

50,000 Branches and Local Agencies the World Over.

heavy horses that they have taken in fine trotters; showing that the trotter or thoroughbred animal requires the services of a number of trainers and extra help, while all that the well bred draft animal needs is plenty to eat

while he is growing; and a ranch hand or other laborer to put a halter on him when grown, at which time he is, after an hour or two, ready to be put to work and be a faithful help and servant from that time on.

Constructive Agriculture—No. 21.

ECONOMICAL CONVEYANCE OF WATER.

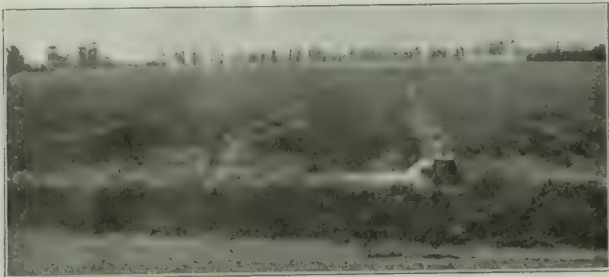
[Written for the PACIFIC RURAL PRESS.]

New settlers, who have come to California in the past few years and invested their all in first payments on land and in the setting out of their orchards or seeding to alfalfa, found themselves in considerable financial difficulty because of the drought.

The very evident need of water to

miles below, alfalfa and other crops dependent on the stream are drying up and dying."

Besides the seepage from the dirt ditches, there are losses by gopher holes and by broken or washed out banks. These all require much expensive repairing. Water lost by the breaking of banks is sometimes worth



Underground System With Portable Hydrant at Intersection of Checks.

save them and older settlers from this damage and loss of crops in the future has had one great benefit: the putting in of thousands of pumping plants, which will result in a permanent increase in agricultural production. This pumped water is always very expensive and must be conserved to the limit, especially in the cases of these recent settlers who have been in financial straits.

CHEAP WAY NEEDED TO AVOID WASTE.

—In the distribution of water to the trees or crops the greatest loss is by seepage from dirt ditches. Nevertheless, the cheapest system is necessary in such cases, for the present; and less wasteful methods of distributing expensive water cheaply are urgently desired.

Dirt ditches, wooden flumes, cement lined ditches are all dug or built at considerable cost to follow the contour of the land at a reasonably uniform grade. In leading the water from them to the crops there is always the need of considerable handwork in connecting them with the plowed furrows; and there is always more or less evaporation and great loss by seepage.

How MUCH IS WASTED.—In the case of dirt ditches, Frank Adams of the United States Irrigation Investigations has this to say, "Seepage from canals and ditches constitutes some of the most serious losses in irrigation; and taken in connection with waste and evaporation losses in application, reduces the average by one-fourth to one-third the area that might be irrigated with the water now used."

B. A. Etcheverry in a bulletin published by the Province of British Columbia makes it still stronger. "On irrigation systems with unlined canals, loss in conveying water usually ranges from 25% to 60% of the water diverted, and there are many instances where the losses are much greater. It is safe to say that on an irrigation system consisting of earth ditches, only 50% of the water diverted is delivered to the fields."

An instance of excessive loss is given by G. E. P. Smith, Irrigation Engineer of the University of Arizona, in the following words: One ditch observed has a valuable water supply at its head and a vain effort is made to hurry the water over the sand on a steep grade. The last drop of water sinks slowly out of sight; while three

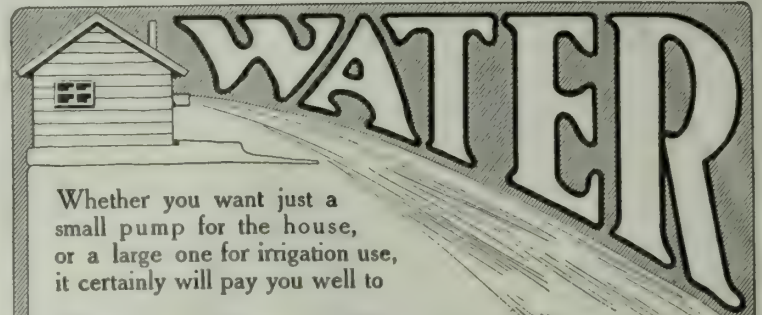
its weight in fruit, because the fruit needs it at that particular time; and later application does not make good the loss of fruit. Ditches require regular cleaning; and they are a fertile

source for the spread of noxious weed seeds by the water.

AVOIDING WASTE.—A little more effective distribution is obtained by

building wooden flumes, which always require rebuilding in a few years and always leak more or less.

A great improvement on the dirt



Whether you want just a small pump for the house, or a large one for irrigation use, it certainly will pay you well to

Get a Good Pump

The safe way is to get advice from pump specialists like ourselves. As manufacturers we have solved hundreds of pumping problems—and our accumulated experience is at your command. Our advice may save you both money and trouble. We manufacture and sell

Horizontal and Vertical Centrifugal Pumps Deep Well Pumps, Windmill Pumps, Etc.



Let us help you select a pump adapted to your particular requirements. CATALOG 28-B describes Bean Centrifugal Pumps. CATALOG 28-D describes all other pumps (also Bean Distillate Engines). A postal will bring either or both. Why not send now?

BEAN SPRAY PUMP CO.

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San Jose, Cal.



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The "Star" Windmill is big, powerful, quiet running and low priced. It will give more and better service than any other. It is made by one of the oldest manufacturers of windmills in the U. S. The first machine to have the double pitman features.

Two Cranks Instead of One

Has powerful direct centre lift. Will take advantage of any wind from a slight breeze to a severe storm. An automatic governor keeps it pumping steadily and without jarring and from being blown out of gear by severe winds. Fully guaranteed.

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Have water under pressure when and where you want it by simply turning a faucet. Having a supply of running water at instant command means more than the comfort it brings and the time and money it saves. It means protection against fire and an added value to your property.

Fully Guaranteed and Easily Operated

There is nothing complicated about a Leader Water System. It will give you pure, cool water whenever you want it, either for bathing, drinking or washing purposes, for feeding stock, for watering lawn or for fighting fire. A Leader Water System means an added value to your property.

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Here is an engine that is different from most engines. It has a world-wide reputation for quality. It combines the good points of high price engines in design, materials and workmanship—all the latest improvements—yet sells for a surprisingly low price. Has few parts, is easy to start and run.

Runs Everything

Will run windmill pump, irrigation pump, alfalfa cutter, cream separator, churn, electric dynamo, washing machine—anything that requires power. Portable—take it wherever wanted.

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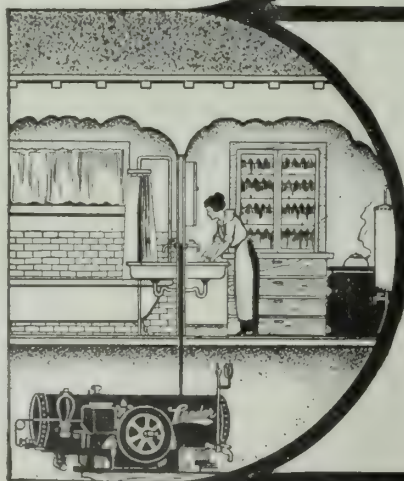
PACIFIC HARDWARE & STEEL COMPANY

Pacific Coast Distributors

706 7th Street, San Francisco, Cal.

Los Angeles

Portland



ditches is the concrete lining, which saves a great deal of the seepage; but which practically always cracks transversely at short intervals, losing considerable water that way; and quite often cracks lengthwise with the swelling of the wetted and frosted soil along side.

Sometimes the sides cave in; quite often at the outlet the dirt is washed from under them and they give way, so that concrete lining does not give the satisfaction which is desired.

To avoid the need of building distribution ditches and flumes on the contour of the land; to avoid evaporation, seepage, loss of water and therefore of crops by washouts, leaks, and gopher holes; to avoid the cost of repairs and the distribution of weed

seeds; to avoid the extra handwork of connecting the ditches with the irrigation furrows, to convey water over uneven ground or force it up hill, to get an extra quantity per second by using pressure, to have the irrigation system out of the way of cultivation, the use of concrete and steel pipe conveyance for water is becoming the solution of the problem in all districts where the owners can pay the initial expense. Concrete pipes last forever so far as we know, with practically no cost of repairs. The pores fill up and there is no appreciable seepage. Steel pipes coated inside and out with waterproof rust-proofing asphaltum are on the market for underground conveyance of water. There is no doubt that with the proper stand-pipes,

valves, and gates, such a system will control the flow absolutely and reduce the losses to a minimum; getting the maximum benefit of the water for the crops just when the crops need it and conserving the total water supply of the district for actual crop production.

SOME GOOD SYSTEMS.

A good sample of an up-to-date irrigating plant on this system is that installed last year on the 10-acre orchard of A. E. Sherman, near San Jose. A motor drive in Layne & Bowler pump back of the house discharges the water into a concrete sandbox. This box is 5x7x8 feet and consists of two compartments connected by a weir. From the second compartment a ten inch concrete pipe conducts the

water to the intake at the center of the 10-inch lateral pipe line which extends along the entire front of the orchard. At the intake, the flow is controlled by two K-T gates in a stand pipe. For every two tree-rows there is a stand pipe for outlet fitted with K-T orchard valves. These regulate the flow, so that all the water can be run in one row or the entire thirty rows can be irrigated at once and one man can attend to it.

The cost of this system, not including motor and pump, was about \$3.30 as follows: Seven hundred feet of 10-inch concrete pipe, including ditching and laying, 32 cents per foot; 15 K-T valves in place, \$2 each; sandbox, \$75.

A similar system, but used for ir-

BRENTWOOD IRRIGATED FARMS

"Best in the West"

No better dairy farms in all California.
Alfalfa and dairying on Brentwood Irrigated
Farms bring large and certain returns.

Brentwood Irrigated Farms are located east of Mt. Diablo in Eastern Contra Costa County on the Southern Pacific railroad. The Santa Fe is about five miles distant. Water transportation about four miles from the east line of the property.

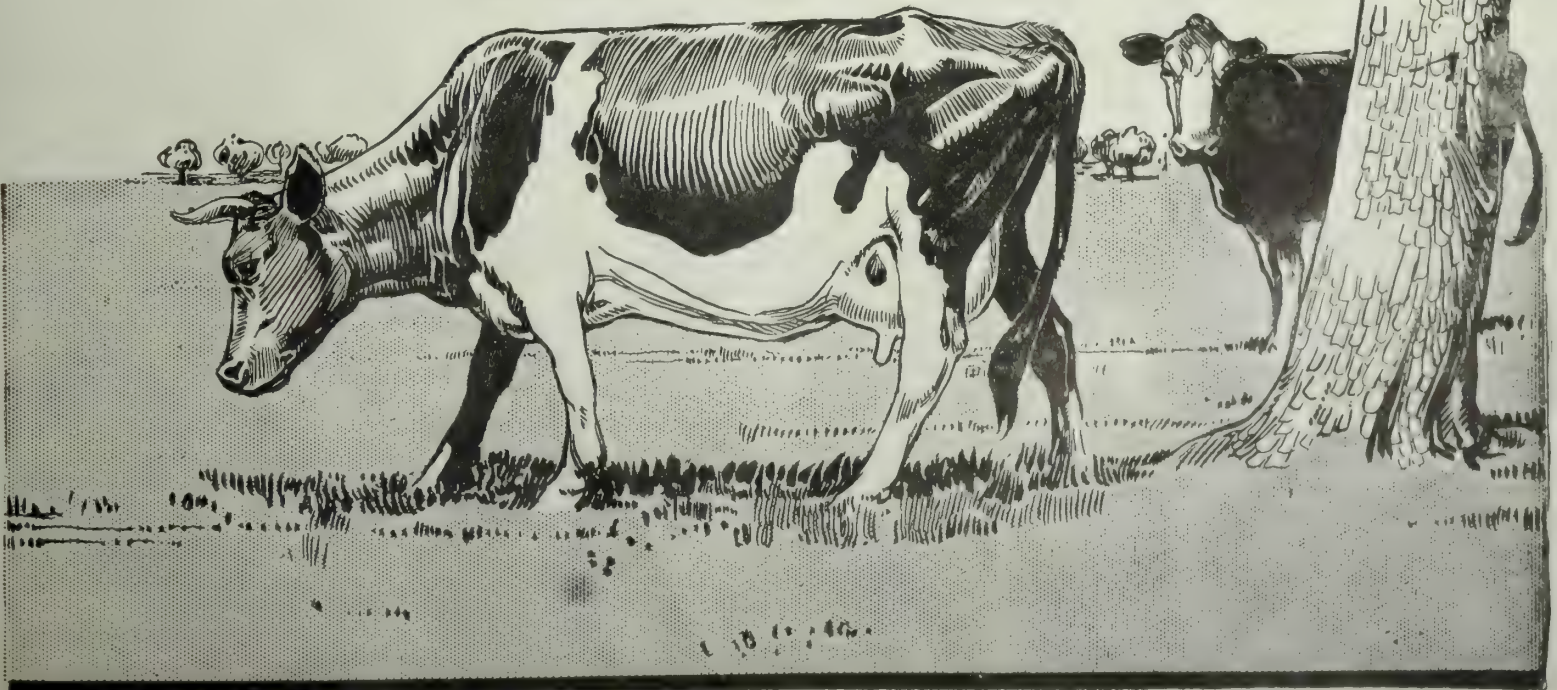
Within 60 miles are the million people of the San Francisco Bay district—a market for everything you will raise, including fruits and vegetables as well as dairy, poultry and pork products.

A complete irrigation system of the highest and best type of construction.

Practically every known California product can be grown here.

Prices, \$300 an acre including water right. Write for illustrated pamphlet.

Balfour, Guthrie & Co., 350 California Street, San Francisco
A. Burness, Resident Agent, Brentwood, Calif.



Feeding Chicks Protecting Them.

[Written for the Pacific Rural Press
by SUSAN SWAYSGOOD.]

Mr. Quisenberry says, "The question of the young chick and growing stock is now uppermost in our minds. If you have not already hatched all you need, then get busy. May and June hatched chicks often develop into the best show birds, and make good layers.

"We sprinkle a little clover chaff, shredded alfalfa, fine cut straw or clean litter free from must and mold, over the brooder floor before putting them in. We provide a small fountain of sour milk or buttermilk for at least the first half of the day, then pure water for the last half. If you cannot get sour milk then use water and keep it before them all the time. We prefer sour milk for the reason that much of the bacteria which we find in the intestinal tract cannot grow and develop in sour milk or buttermilk; but sweet milk has not this same effect. The acid of sour milk aids digestion, kills bacteria, and has an appetizing effect. The chicks are not fed for forty-eight hours after they are hatched. Don't feed too soon. Give the chicks time to assimilate the yolk of the egg which contains enough food to last them several days.

"Begin by feeding a mixture of two-thirds rolled oats and one-third wheat bran, mixed with a small amount of charcoal. Oatmeal is the finest feed for young animals. This is fed on a clean board or paper four or five times a day and only a small quantity fed at once. We remove the feeding board after the chicks are through eating. Clean coarse sand, or fine grit is given about the first time we feed and no grit is given before. After the chicks are four days old begin to add a little commercial chick feed to the oats mixture and gradually increase this until the rolled oats and bran are eliminated from the feed. At about five days begin to feed a dry mash as follows: Two parts wheat bran, one part cornmeal, one part shorts, one part rolled oats or oatmeal. To every hundred pounds of the above mixture,

we add a handful of bone meal, and a half pound of fine table salt, mixing it thoroughly. When the chicks are six weeks old their ration of chick feed and rolled oats can be gradually changed to cracked wheat, corn, and kaffir corn, but keep up the dry mash.

"Look out for mites and lice. Keep the chicks dry. Sour milk used for the start will check white diarrhea. Get the chicks into colony houses and on free range as soon as possible. Feed both grain and dry mash from hoppers. For grain use chiefly wheat and cracked corn. They will grow faster and do better as a rule. The average amateur doesn't know as much about feeding as the chicks do themselves. Give a moistened mash to the growing stock once a day. We have had a number of cockerels develop so rapidly, fed in this way, that they were crowing at seven weeks old."

Now if sour milk served once in the first place will prevent white diarrhea it will sure be a bonanza to the poultry world, anyway it won't cost much to try it as most of us can get a little sour milk to experiment with.

Be sure not to mix things, however, by feeding sour milk one day and sweet the next because if you do you will certainly have trouble. Better use clean cold water.

HAWKS AND CROWS.

Nearly all kinds of preying birds, like chicken; and it is well to be on the look-out for them. Hawks want their meat alive and they are quite ingenious and patient too in devising methods to get it. A small steel trap set on the top of a high pole in the chicken yard, and made fast by a chain will often get the hawk when he lights to look over the lay of the land. And a good dog trained to bark and chase them at the word "Hawk" will keep them far enough away from your yards, and your neighbor must do the same. For the skunk there is nothing better than a trap. If it is set right and covered they will walk right in.

The crow is a little different proposition than the hawk, because he will take either live or dead chicks. A careless poultryman that buries or just throws his dead outside the yards is inviting lots of trouble for himself. At first Mr. Crow will carry off those he finds lying loose; but when the supply runs short, he does not hesitate to go right in the yards and help himself from the flock. Better have a crematory and burn all dead chicks with the aid of a little coal oil.

When they are disposed of in this way there is nothing to attract hawks and crows; neither is there any chance of stray chicks that get out of the runs, getting limberneck by eating rotten carcasses. This is always a possibility so long as you bury the dead in the ground. Dogs prowl around in the night digging up the carcass, then the chick that is after the early worm finds one and it often happens that this is a dear find: for like as not the early worm chick develops limberneck and passes in his checks. A little chick has more enemies to fight than a baby really, and we watch over the baby and let the poor chick take its chance. It does not look like a square deal to me and when I lose a chick through any neglect on my part I feel awfully mean. We should at least protect them from outside enemies that the

mother hen would look out for if left with her family.

FOOT TROUBLES IN YOUNG CHICKS AND TURKEYS.

Three cases of foot ailments have been reported by letter during the past few days. Mrs. R. M. B. writes: "Have some little turkeys three or four weeks old. They have grown fine until last week one of them commenced to limp. I picked it up and its toes, at the end looked as if they were burned. Turned dark and commenced to turn up. Since then they have rapidly grown worse until now nearly the whole flock are getting curly toes and seemingly drying up. The poulters have had grit, charcoal, fresh water, bread soaked in milk and Coulson's chick feed. Any help you can give me will be appreciated."

Another subscriber writes exactly the same story, a lot of young turkeys affected with some ailment that turns the toes dark. This lady gave more information so that it was easier for me to get some idea as to the cause. She says "the toes turn dark, gradually dry up until there is no blood in them if cut. They seem healthy otherwise and up to this time none have died. They have a grass run, plenty of feed and water and have grown well up to this toe trouble."

The next enquiry is from Mrs. M. L. H. "This is just a little different because the afflicted brood is chickens that were hatched in March. This lady says the January chicks are all right and only a part of the March hatched ones are afflicted. But in this case as the others the toes turn dark and curl up which causes the chicks to walk flat footed, and they do not grow.

Now I confess that this toe trouble has got me guessing, and unless it is caused by a germ I am just as much in the dark as any of you. Chicks that are kept in heated brooders do sometimes develop just such ailments in the feet, that is the feet will dry up and shrivel but for chicks that have a grass run and are on the ground I can see no cause except a germ. I would try No. 1 Kreso Dip obtained at any drug store. Mix in good warm water as strong as you would for lice; directions for which are on the bottle. Don't be afraid of a little trouble, and dip every day or two or three times a day if you can take time, wiping off the extra wet each time. Keep the chicks as warm and dry as possible and add a little Iodide of Potassium in the drinking water, keeping all other water from them. Ask your druggist what quantity of Potassium to use in a quart of water; then follow his directions.

An irrigation project to reclaim land from west of Hamilton City to Willows and to cost \$750,000 was recently financed.

POULTRY BREEDERS' DIRECTORY

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

BABY CHICKS—34,000 hatching capacity; orders taken now for White Leghorns, Black Minorcas, Rhode Island Reds, to be shipped from 16th to 18th of April and 19th to 25th of April. All choice quality. Stock can not be excelled. Western Hatchery, Petaluma, Cal. References, Petaluma Nat'l Bank.

BABY CHICKS!—June and July prices. R. I. Reds, Black Minorcas, \$11 hundred; 12c each in small lots. Breeding stock for sale, \$15 dozen, mated. Also have some fine White and Brown Leghorn, Barred Rock and Buff Orpington hens for sale. Roofden Poultry Ranch, Campbell, Cal.

BABY CHICKS—Best stock White and Brown Leghorns. Also Barred Rocks, R. I. Reds, and other varieties. Capacity, 44,000. Large orders on White Leghorns a specialty. Write for particulars. J. A. BIHN, Santa Clara Valley Hatchery, San Jose, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

WHITE AND BROWN LEGHORN chicks, from heavy laying strain, \$9 per 100. Get our strong chicks and see how easily they are raised. Good breeding pens reasonable. J. H. Stubbe, Campbell, Cal.

INCUBATOR CHICKS—White Rock, Black Minorca, White, Brown and Buff Leghorns. All high-class stock. Send for booklet of prices. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

FOR STANDARD BABY CHICKS or hatching eggs from Hopland Stock Farm, apply to The Thomas Hatchery, Petaluma, Cal. Send for pamphlet and prices. Now booking orders for April and May delivery.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Vodden, Box 396, Los Gatos, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

DIABLO WHITE ROCKS—EGGS for HATCHING. Special exhibition mailings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

EGGS FOR HATCHING—Pure-bred White Rocks, \$1 per setting; \$6 per 100; until September 1. Mrs. J. B. Tupper, Ceres.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

CROLEY'S POULTRY CONDITION POWDER is a wonderful help during the molt. Try some. Your dealer has it.

PETALUMA BROODER STOVE, Haywards, Cal. Best on market. Latest improvements. Catalogue free.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BUFF AND WHITE ORPINGTONS. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

PIGEONS.

THOROUGHbred CARNEAUX, \$2.50 mated pair; youngsters \$6 dozen. Homers, \$1 mated pair. Sunny Slope Squab Farm, Healdsburg, Cal.

BELGIAN HARES.

THOROUGHbred Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

FREE BOOK

Raising Calves without milk. Everything you need for stock and poultry raising. Write today.

F. F. SMITH & CO.,
1004 J. St. Sacramento.



Free Book

giving a full account of hatching, raising, and caring for chickens,

with details of a Complete System of Feeding.

Will be sent to you on application

COULSON CO.
Box E Petaluma, Cal.



Chicks from a S. C. white leghorn strain we have been working up for 20 years. Write today (a postal card will do) for our special low prices for the next three months. These chicks will make heavy winter layers.

S. C. WHITE LEGHORNS BABY CHICKS
Write today and get chicks for winter laying and excellent profits
THE BIHN HATCHERY Largest in the World. Capacity 165,000 Chicks PETALUMA, CAL.

rigating alfalfa, is in use at the County Hospital at Santa Clara. Here also the water is delivered to the intake of a 10-inch pipe line, extending the length of the 15-acre alfalfa field which is four checks long. From the main line, three branch lines cross the field 300 feet apart under the levees.

On account of a fall of about 14 feet in the branch lines, it was necessary to place midway in each, standpipes with gates to relieve the pressure. Stand pipes fitted with K-T alfalfa valves are placed at intersections of every other check. In this way, four checks are irrigated from each valve. Two portable hydrants are used and one man irrigates the entire field in a short time.

Judge S. F. Lieb has just completed the installation of one of these systems on his fine walnut orchard at Cupertino; but has not yet begun to use it.

The three great advantages of this underground system are: (1) It is permanent and out of the way, (2) It affords economy of water, eliminating waste by seepage and evaporation, (3) It affords economy of labor—one man being able to handle a large quantity of water.

COST OF PUMPING.—Some fruit growers of Santa Clara valley have wells and pumps, but depend on itinerant gasoline engines to do the work. The 40 hp. engine of Filice Bros. is mounted on a wagon; and pumps an eight inch stream from any depth necessary, at 90 cents per hour. While this is satisfactory to those who can get the engine when the crops need water, it seems that the danger of delay at critical times would lead every well-owner to install a gas engine or electric motor.

EFFECTS OF WASTE.—This cost, and danger of delay, however, are the least permanently grave features of wasted water; for in that valley, as in many others, it has been feared that the considerable increase in irrigation and the planting of orchards and alfalfa would so lower the water table that perhaps the water supply would be insufficient in times of dry weather, and that their crops would be lost, even with pumping plants in operation. More than this, the seepage waterlogs the soil unfitting it for crops by driving out soil air; and if there is any alkali, brings that to the surface. B. A. Etchevery states that this effect, combined with wasteful irrigation, has been the cause of over 10 per cent of the irrigated lands of the West becoming unfit for crop production.

CHEAPER WAY TO AVOID WASTE.

Yet, though complete underground piping systems surely pay, there are thousands of people in California who cannot put them in. Then they may have a pipe or even an open ditch along one side of their orchards; and may get the same benefit at a very much decreased cost with a little extra labor, by connecting the head system with a disjoinable line of galvanized steel surface pipe.

This costs in lengths of 10 feet, which fit into each other, and in diameters of 4 to 16 inches, about 19 to 60 cents per foot.

Enough of this may be used to run from the head ditch or pipe across the orchard, irrigating the farther end first and using portable hydrants or taking off several joints when the soil has been sufficiently soaked. This avoids the waterlogging of soil near

THE MONEY MAKER SELF-FEED POWER PRESS



Carried in stock in 17 x 22 size only.

Furnished complete with engine mounted or with ENGINE EXTENSION ONLY FOR MOUNTING YOUR OWN ENGINE. Engine extension and engine can be readily detached and mounted on truck for other uses about the farm.

HEAVY CONSTRUCTION and SEMI-STEEL GEARS reduce cost of upkeep to a minimum.

THE SELF-FEEDER is a patented attachment obtainable on this press only and SAVES THE WAGES OF A MAN ON THE FEED TABLE, eliminating all danger at that point and INCREASING THE CAPACITY OF THE BALER 25% to 50% by increasing the speed of its operation. THIS PRESS WITHOUT THIS PATENTED ATTACHMENT HAS ALL THE FEATURES OF OTHER SO-CALLED SELF-FEED PRESSES.

Write for complete catalog and information.

BAKER & HAMILTON, San Francisco, Los Angeles

MOVING THE EARTH BY CHUNKS AND PUTTING IT WHERE IT SHOULD BE



This huge SCRAPER does the work of 15 to 20 Fresno Scraper Teams, tearing down or building levees and railroad grades, building roads, leveling land for alfalfa, rice or orchards. Don't fail to see this machine and some other labor-saving machinery made by the

SCHMEISER MANUFACTURING CO., Davis, Cal.

the head ditch before the far end of the furrow is wetted at all. Waterlogging is a waste of water as well as of crops.

The surface pipe carries water over uneven land, along the same line as would be occupied by underground pipe, and when that section of the orchard is watered the pipe is moved to the next by simply pulling the joints apart and carrying them whither they are to be used for the next irrigation. One line of galvanized piping will take the place of several lines of permanent piping, which would have to be buried after digging a ditch at considerable expense. It is just as effective, with one advantage. Such pipes will discharge the water not at fixed hydrants, but exactly where it is desired. This is especially desirable on uneven hillsides, such as we find all over California. Of course with hydrants,

shorter pieces of surface pipe could be used to the same purpose.

The water may be run through the pipe clear to the bottom side of the orchard and around the trees by contour furrows, where it will soak directly into the ground where needed, with no loss along the way and no washing of soil. The rows farther up the hill will then be watered by taking off two or three joints.

An old farmer who had driven into a neighboring village to make a few purchases had rather more cider than was consistent with careful driving. While going down a steep hill his horse stumbled, fell flat on the road, and refused to get up. The farmer looked at him a moment over the dashboard, then exclaimed:—

"Git up, you old fool! Git up, or I'll drive right over you."

Larger Salary



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The Home Circle.

Dumpey.

Dumpey was drummer in a foot battery of the United States artillery stationed at one of the harbor posts in the East. His descriptive list showed him 5 feet 1 inch high, sallow complexion, brown hair, and thirty-six years of age. There were only two things he could really do well—drum and drink; so the junior lieutenant of the battery, who was his "good friend" (to use Dumpey's own words), dubbed him D-2.

There were a number of boys in the garrison and we were all on intimate terms with Dumpey. To us, in spite of his thirty-six years and the fact that he had served through the four years of the rebellion, he seemed but a boy. He was always good natured; ready for a swim or fish; ready to play ball; and sometimes, when in a particularly amiable mood, ready to give us a lesson on the drum, which he considered the "king of instruments."

"Fiddles are all right," he said once when the colonel's son ventured to differ with him, "fiddles are all right, but," with a superior smile, "not for soldiers. Did you ever hear tell of a

fiddler of Chickamauga? Come, answer me that."

Of course we sided with Dumpey; what real boy wouldn't?

I can see him now, with his drum slung from his neck, his little figure drawn up to its full height, proudly showing us how to make the drum "talk."

"This is what we played at Mission Ridge," and then he would begin.

One heard the tramp of marching feet, the thunder of cannon, the rattle of musketry, the shouts and hurrahs of the men, and, above all, the rub-a-dub-dub, the rub-a-dub-dub of the drum. It sent the cold shivers down our backs, the blood jumping through our veins, and our boyish hearts thumped and thumped until we thought they must surely burst; then he would change, and in an instant all was different.

The slow and solemn beat of the muffled drum, the long, melancholy, almost human, roll, and knew that the battle was over and that the dead were being laid away to their last rest. The tears came in our eyes, a choking in our throats, and then

They dressed me up in sojer clothes.

They treated me so kindly,

And yet I never could forget

The girl I left behind me—

And we'd fall in and march behind our friend until we reached the battery quarters.

Sometimes when the grizzled first sergeant of the battery was inclined to be pleasant, we would stay to dinner with Dumpey; bean soup, pork, bread and coffee, with a real live cook's bully (soldier) to wait on us, just as if we were full-fledged battery men.

These were our happy times; there were sad ones (usually at pay day) when Dumpey would fall from grace and disappear from among us for days at a time. Sometimes, he would be in the guardhouse, sometimes in the hospital. We never spoke of it, and when the fit was over he would be safe for a few more months.

It was a sad day for the battery, and particularly for Dumpey, when the junior lieutenant left our post by transfer. The very next pay day Dumpey was in the guardhouse with general charges against him. Intercession proved of no avail. The captain was determined to make an example of him; but the court was lenient, as, after a month's confinement, Dumpey came back to us, but an altered man. Not that his manner had changed toward us; he was still our friend, but his boyishness and lightness of heart seemed gone.

"He'll get me yet," was all he said when we asked him the trouble. "He," of course, meant the captain, who for some unaccountable reason had taken a strong dislike to the lowly drummer. Things went from bad to worse. Dumpey was in the guardhouse continually—first for one thing and then for another, which, though trivial enough in their way, were rapidly building up a bad reputation for him, which he did not really deserve.

The end came when they found him drunk on guard. The general court, which tried him, found him guilty and sentenced him to be drummed out of the service. The colonel wrote to the reviewing authority rather strongly in his favor; but Dumpey was doomed. Nothing could save him, and the sentence was duly confirmed.

Never did sun shine brighter; never were skies bluer; never was nature

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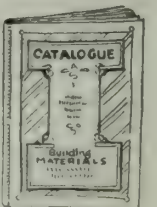
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2 ft. 8 in. x 6 ft. 8 in. Oregon Pine Doors	\$1.50
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There are hundreds of others. If you want the full value in building material for every dollar you spend, send for our catalog. Do it now.

CONTRACTOR'S AND BUILDER'S SUPPLY CO.,
Fifth and Cypress Sts., Oakland, Cal.

more generous than on that dreadful May morning almost thirty years ago. We had all been to see Dumpey at the guardhouse the night before. We had shaken hands with him and carried him such boyish gifts as we could to

assure him of our loyalty and friendship, and he, poor old boy, had turned away from us and wept like a child.

It was the first and only time I had ever seen a man drummed out of the service. I can never again see such a

shocking sight of a man's inhumanity to man.

Almost thirty years ago—I was a very young boy then, still I remember that the sun was bright and that skies were blue; I remember that the air was soft and balmy; I remember that the flag, emblem of liberty and equality, threw out the glory of its stars and stripes straight and strong to the morning breeze; I remember that we all stood huddled together, waiting—and—then it came.

First the drums and fifes; then two platoons of men fully armed and equipped, their bayonets flashing and sparkling in the sunlight, and between them, Dumpey, with head closely cropped, and on his back a board marked "Drunkard!"

And still—the sun shone, the skies were blue, and the flag flapped gaily overhead.

On they came, the drums and fifes playing the "Rogues' March."

Poor old soldier; poor old soldier, Tarr'd and feathered, and then drum'd out,

Because he couldn't keep sober.

Our hearts were in our throats, but we clenched our hands and held our places like men.

There was no music in the march; it was simply a wailing and sobbing of the drums—the drums to drum Dumpey out of the service: Dumpey, their champion, their hero, their king.

But on they came—

Poor old soldier; poor old soldier—

Just as they passed us we heard some one ask:

"What makes him walk so queer? He seems to be limping."

Every boy there could have told him that it was the bullet he got at Mission Ridge which the doctors had never been able to take out.

And on they came—

Tarr'd and feathered, and then drum'd out,

At last they reached the sally port—Because he couldn't keep sober.

shrieked out the fifes, and a moment later Dumpey stood outside the fort, a free man.

And then—this worthless outcast, this drummed-out drunkard, the limping, halting, wounded ex-soldier, who had played a man's part in the bitterest war the world had ever known, this drunken Dumpey, halted, quickly took the board marked "drunkard" off from his back, and, baring his closed-cropped head to the morning sun, looked up toward the flag and bravely cried out:

"Three cheers for the Stars and Stripes."

I have never forgotten it. Please, God, I never will.—N. Y. Sun.

Hardwood Floors.

To repolish hardwood floors, melt half a pound of pure beeswax and add a pint of turpentine and half as much ammonia. Stand the mixture over a boiling kettle, in order to keep it warm. Apply to the floor with flannel cloth, and let stand until quite cold. Now as to polishing, the merriest and quickest method is to give the children a lark. Collect from the rag bag all the discarded stockings and socks, draw them on over the children's shoes, start a two-step on the piano, and the children will do the rest. If, unfortunately, your neighborhood offers no children, your second choice of a polisher is an adult with a piece of Brussels carpet wrapped around a brick.—Harper's Bazar.

Our Young Folks

The Transient.

By FRANCES HARMER.

The term was nearing its end. The long holidays were but six weeks off. Every department of the school was putting on steam, and nearly every member of it was frankly confessing to "nerves". The only exemptions were the games' mistress and her devotees, for games demand a steady hand and a true eye, well-trained muscles and obedient nerves.

"I do believe," said Miss Prince, the head of the Rosedale School for girls, "that it's a kind of tradition with the teachers to get worn out and hysterical at the end of term."

"So do I," replied her associate, Miss Ward. "The tradition goes down to the girls. Myrtle Green and Miss Dunbar have just had a terrific falling-out, and are now making it up in each other's arms. Ridiculous!"

"The girls are reported to me every day," sighed Miss Prince.

After evening prayers, Miss Prince detained the girls.

"A new pupil," she announced, "is coming tonight. She will be here only until the end of term, as she goes abroad before September. As we cannot expect her to take the examinations, she will have a good deal of spare time. Don't encourage her to waste it in idle gossip."

The sound of carriage wheels on the path outside made everyone turn to the windows. The station hack had drawn up, and a solitary girl was descending. Miss Prince hurried out to receive her.

Gladys Gray looked up as the principal emerged from the great hall door. She was a slim little creature, small for her fifteen years, with large, wide-open, eager eyes, and a quantity of soft, dark hair, never too tidy. She wore plain mourning. Her face was sweet, but indicated plenty of character.

"Welcome, my dear," said Miss Prince, kindly. "Have you come alone?"

"It seemed silly for any one to come just to go back," answered Gladys, in a clear, decided voice, "so I came alone." She looked eagerly round. "I hoped," she said wistfully, "I hoped I'd see some of them tonight." Miss Prince beckoned to two of the girls.

"Emily Dunn and Catherine Wilde," she said. "Come here, and take care of Gladys Gray."

Gladys surveyed her new companions. They were both very near her own age, and she liked their looks. Emily had a kind of wild-rose beauty, and Catherine was like a pretty gypsy, Gladys decided.

A few hours later, while her room-mates slept, Gladys knelt beside the open window, more heartsick and homesick than she could ever have thought possible. Ideals lay in ruins all about her! For years she had longed to go to a boarding school; and now that the conditions of her mother's legacy had sent her here, and would send her later to Germany, she was sorry that she had ever breathed her desires into those kind ears.

"Nobody seems nice," she said to herself, "and nobody likes anybody!"

A night's sleep refreshed her, however, and she woke with her usual bright interest in life.

Emily and Catherine were dressing when she opened her eyes. As she turned over on her pillow, Emily smiled at her.

"Isn't it a brute of a bell?" she said sympathetically. "But you don't have to get up. New girls needn't, for three mornings."

"That sounds nice," said Gladys, brightly, as she drew on her wrapper and slippers. "Miss Prince must be very thoughtful."

She gathered her towels over her shoulder, picked up her soap and sponges, and set off for the bathroom.

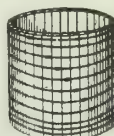
"Thoughtful," repeated Catherine, studying her back hair by the air of two hand-mirrors. "Yes, she is—for herself. She doesn't want them complaining home in their first letters."

"She has to look out for next term, if her school's to keep on," explained Emily. "Oh, she's thinking of that when she makes things pleasant for a new girl."

"Not in my case, for she knows I'm going to Germany," retorted Gladys, as she disappeared.

At breakfast, to her relief, she was not put with her room-mates. As fortune would have it, she sat with Estelle Trent and Hope Carston, the champion tennis players, Miss Damer, the games' mistress, and one or two others whose interest centred in what they liked to term sports. Here, to her relief, the talk turned on somebody's "serves" and "volleys."

(To be Continued.)



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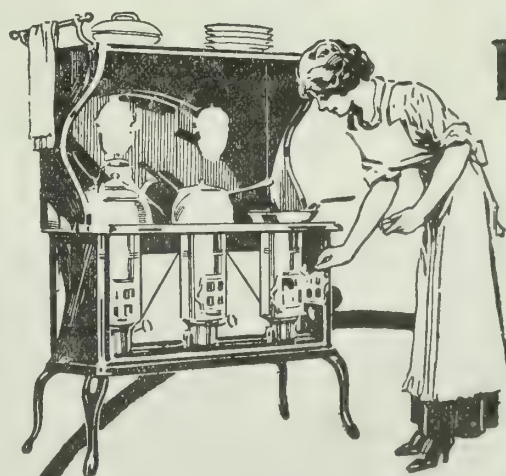
NOTICE TO STOCKHOLDERS.

The Regular Annual Meeting of the stockholders of the GRANGERS' BUSINESS ASSOCIATION will be held at the office of the Company, No. 240 California St., San Francisco, Cal., on Tuesday, the ninth day of June, 1914, at 10 o'clock a.m., for the purpose of electing a Board of Directors to serve for the ensuing year, and for the consideration and transaction of any other business that may be brought before the meeting.

F. A. SOMERS, President.

R. H. CHILDS, Secretary.

Dated May 22, 1914.



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is not just a "quick lunch", light housekeeping affair. It is a complete all 'round stove that you can bake, broil and roast on just as well as on a wood or coal range—and a lot cheaper. Best of all—it doesn't overheat the kitchen. An ideal summer stove.

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Dealers everywhere.

Standard Oil Company
(California)

FOR
BEST RESULTS
USE PEARL OIL

THE MARKETS.

San Francisco, May 27, 1914.

Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Arrivals from the north have been quite large this week, and red and bluestem are quoted a little lower, though other grades are unchanged. There is no large buying movement, as most requirements are provided for and conditions are favorable for a very large crop both here and in the north. The tendency of values is accordingly downward.

California Club, cti....	\$1.60	@1.65
Forty-fold	1.65	@1.70
Northern Club	1.60	@1.65
Northern Bluestem ...	1.65	@1.70
Northern Red	1.52 1/2	@1.65

BARLEY.

Arrivals are large, but consist mostly of deliveries on May contracts. The spot market is extremely dull, business being almost entirely of a small jobbing nature. Prices are weak and lower for ordinary offerings, though choice stock can hardly be bought below last week's figure.

Brewing and Shipping. Nominal	
Choice Feed, per cti....	\$0.97 1/2 @1.05
Common Feed	Nominal

OATS.

Prices are unchanged. Supplies are very scarce, and holders show a firm attitude, but there is not enough demand to permit any advance.

Red Feed	\$1.20	@1.30
Gray	Nominal	
White	1.30	@1.35
Black Seed	Nominal	

CORN.

The recent advance in Eastern corn has curtailed the demand, and trading is very quiet. Spot offerings are light, however, and values are firmly held, Egyptian being firm in sympathy.

California Yellow	Nominal	
Eastern Yellow	\$1.80	@1.85
Eastern White	Nominal	
Egyptian	1.85	@1.90
Milo Maize	1.80	@1.85

RYE.

Values stand nominally as before, with practically nothing offered and not enough demand to establish definite prices.

Rye, per cti.....	\$1.45	@1.50
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BEANS.

The local bean market is as firm as ever, and dealers report quite an active shipping demand. Supplies are already light, and from present indications will be cleaned up earlier than usual. Prices in several lines have taken an upward turn again, and there is no prospect of any lower figures prevailing until the new crop comes in. Bayos cannot be had below \$6.50, and cranberry beans show a wide range, California stock bringing the top figure, while Oriental offerings are fairly cheap. Large whites, limas, pea and pink beans are all higher. The crop outlook is not very well defined, but the acreage is said to be unusually large.

(On wharf.)

Bayos, per cti.....	\$6.50	@7.00
Blackeyes	7.50	@7.75
Cranberry Beans	4.25	@6.00
Horse Beans	1.90	@2.15
Small Whites	5.00	@5.25
Large Whites	3.90	@4.50
Limas	6.50	@6.85
Pea	4.25	@4.50
Pink	4.00	@4.20
Red Kidneys	Nominal	
Mexican Red	6.00	@6.25

SEEDS.

Business has settled down to the usual summer dullness, with no large movement in any of the lines quoted. Values are pretty well maintained, as the bulk of the stock is in strong hands.

Alfalfa	12 1/2	@15 c
Brown Mustard, per lb....	3 1/2 c	
Canary	7	@7 1/2 c
Hemp	2 1/2	@3 c
Millet	2 1/2	@2 1/2 c
Timothy	7 1/2	@8 c
Yellow Mustard	Nominal	

FLOUR.

Business has quieted down somewhat of late, as the present easiness in the grain market is unfavorable to any further advance. Values, however, show no sign of weakness for the present.

Cal. Family Extras....	\$5.80	@6.20
Bakers' Extras	4.80	@5.40
Superfine	3.90	@4.20

Hay and Feedstuffs.

HAY.

Arrivals of hay in the local market for the last week have been somewhat heavier than for some time previous. This includes some new hay, but not much, the increase being due mostly to the effort to clean up old hay before the new crop comes on the market. The demand is of the same limited nature as before, and the difficulty of disposing of the arrivals has brought a further decline. It is expected that buyers will soon begin to take more interest, but there is no prospect of the usual activity for this time of year. Consumers count on being able to get cheap hay throughout the year, and are not disposed to put in large stocks; while speculative interests will doubtless hold off for some time in the hope of getting bargains. The rain did some damage, mainly to volunteer hay, but there will still be a heavy crop practically everywhere, with a consequent lack of demand from many sections which frequently depend on supplies from other quarters.

No. 1 Wheat, or Wheat and Oats	\$11.00	@12.00
do No. 2	9.00	@11.00
Lower grades	8.00	@9.00
Tame Oats	8.00	@12.00
Wild Oats	7.00	@8.50
Alfalfa	7.00	@9.50
Stock Hay	5.00	@6.00
Straw, per bale.....	60	@90 c

FEEDSTUFFS.

Alfalfa meal has been marked down a little, owing to the abundance of raw material. Bran is very firm, as the mills are running on a small scale, but competition with barley prevents any further advance. Other lines are quiet at the former figures.

Alfalfa Meal, per ton....	\$17.00	@18.00
Bran, per ton	24.50	@25.50
Oilcake Meal	34.00	@35.00
Cocoanut Cake or Meal..	26.00	@27.00
Cracked Corn	41.00	@42.00
Middlings	32.00	@34.00
Rolled Barley	22.00	@22.50
Rolled Oats	28.00	@29.00
Shorts	26.00	@27.00

Garden Truck.

VEGETABLES.

The general tendency is downward, owing to the constantly increasing arrivals of summer garden truck, although the demand is expanding with the variety of offerings. Asparagus is still coming in freely, and is a little lower than last week, though there is no sharp fluctuation. Green peas are lower, though fancy stock is scarce, and often brings a premium. Beans have dropped sharply with larger offerings. The supply of southern tomatoes is expected to increase rapidly, but values are still pretty well maintained, and green peppers are quoted as before. Cucumbers are becoming fairly plentiful. Eggplant is still firm, and green corn sells off readily at fairly good prices, Alameda stock finding the strongest demand.

Cabbage, per cti.....	\$1.00	@1.25
Cauliflower, dozen	40	@70 c
Green Peppers, lb.....	3	@8 c
Carrots, per sack.....	35	@50 c
Green Peas, sack.....	2.50	@3.75
Tomatoes, Southern, crate	1.25	@1.50
Beans: Wax	3	@5 c
String	3	@5 c
Rhubarb, box	50c	@1.00
Asparagus, box	75c	@1.75
Cucumbers, box	75c	@1.00
Eggplant, lb.	10	@15 c
Green corn, doz.....	25	@50 c

POTATOES AND ONIONS.

Supplies of potatoes are ample for all requirements, with liberal arrivals from the river district, and prices for both old and new stock remain as before. Sweet potatoes are a trifle lower. The market still depends largely on Australian and Bermuda onions, which

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AND ALL OTHER KINDS

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353 BEACH ST.

SAN FRANCISCO, CALIF.

OPERATING OWN LOGGING CAMPS AND MILLS

are firmly held, though some new reds are appearing, and bring rather high prices. New garlic is coming out in larger quantities, causing a drop in prices.

Potatoes:

River Whites	40	@60 c
Garnets, lb.	2 1/2	@c
New Potatoes, lb.....	1 1/2	@2 1/2 c
Oregon Burbanks	75c	@\$1.00
Sweet Potatoes, per cti..	2.25	
Onions: Australian	\$4.00	@4.25
Bermuda, crate	2.00	@2.50
New Red, cti.....	2.50	@3.00
Garlic, new, per lb.....	5	@10 c

Dairy Produce.

POULTRY.

The market is not cleaning up quite as well as last week, with fairly large shipments from nearby points and good-sized arrivals from the East. This has caused a little easier feeling as to prices, although the only quotable decline is on large broilers.

Large Broilers	22	@23 c
Small Broilers, per lb..	21	@22 c
Fryers, per lb.....	24	@25 c
Hens, extra, per lb.....	19	@20 c
Hens, large, per lb.....	19	@20 c
Small Hens, per lb.....	18	@19 c
Young Roosters, per lb..	24	@27 c
Squabs, per doz.....	\$2.50	@3.00
Geese, per pair	2.50	@3.50
Ducks, doz.	6.50	@8.00
Turkeys, live, per lb....	20	@21 c
do dressed, choice....	23	@25 c

BUTTER.

Prices have shown practically no change from those of last week, supply and demand being about even. Liberal shipments are coming in from Humboldt, and considerable stock has been offered on the Exchange, but without causing any depression of prices.

Thu. Fri. Sat. Mon. Tu. Wed.						
Extras	24 1/2	24	24	24	24	24
Prime	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2
Firsts	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2	23 1/2

EGGS.

There has been practically no change except on pullets, which are a trifle lower, but find a good demand at the present figure. Arrivals, though large, are well taken care of, and the market shows quite a steady appearance.

Thu. Fri. Sat. Mon. Tu. Wed.						
Extras	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2	22 1/2
Firsts	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2
Selected	20 1/2	20	20	20	20	20 1/2

CHEESE.

Supplies of California stock are coming in freely this week, but meet with a good demand, and values are well maintained. Offerings of Monterey cheese have fallen off, causing a slight advance.

Fancy California Flats, per lb...	13 1/2 c
New Young Americas, fancy....	15 1/2 c
Monterey Cheese	13 1/2 @14 c

At Los Angeles the dairy produce markets for the past week have been as follows:

Wed. Thu. Fri. Sat. Mon. Tu.						
Butter:						
Extras.....	25	25	25	25	25	24
Eggs	23	23	23	23	23	23
Cal. Cheese:						
Flats	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2	13 1/2

Deciduous Fruit.

Figs are the only addition to the list this week, with shipments from Arizona coming in with some regularity, though the supply is light. The berry market shows several slight re-

ductions, but mostly in the top quotations. Offerings are increasing, but there is a very large demand and the surplus is disposed of to canneries. Loganberries have taken quite a drop, and currants are also lower, while gooseberries find a ready demand at good prices. Apricots are much lower, but attractive offerings find a large demand and northern California stock seldom sells below \$1 per crate. Peaches are easy and receive little attention, as most offerings are green. Cherry prices are well maintained, the greatest drop being on Royal Annes. The demand is heavy, and most arrivals clean up without difficulty. Cantaloupes are a little lower, but are moving off in good shape.

Blackberries, crate	\$1.00	@1.25
Loganberries, chest	4.00	@5.50
Raspberries, crate	1.00	@1.25
Gooseberries, lb.	6	@7 c
Strawberries:		
Malindas, chest	2.50	@5.00
Banner, chest	2.50	@4.50
Longworths, chest	4.00	@6.00
Apples: Newtown Pippins	1.00	@1.75
Oregon Spitzenbergs	1.40	@2.00
Apricots, crate	50c	@1.75
Peaches, crate	1.00	@1.75
Cherries:		
Black, box	60	@75 c
White, box	50	@75 c
Royal Anne, box.....	65	@75 c
Figs, box	1.50	@1.75
Currants, chest	8.00	@10.00
Cantaloupes, crate	4.00	@4.50

Dried Fruits.

Nothing new has developed as to prices in the country, and local packers say the market is decidedly quiet at the moment, the recent excitement having disappeared. The active buying policy followed by packers a week or so ago has given place to one of watchful waiting, as early requirements have been pretty well covered. Eastern buyers are not responding readily to the upward movement of prices, and there seems to be a little uncertainty about the shortage of some crops. A great deal of fruit has already been taken under contract, however, and growers have no disposition to force the market. Under present commercial and financial conditions it is quite possible that buyers, both here and in the East, will work on a conservative basis; but everything in the crop situation seems to indicate that prices will at least be no lower on the principal lines. Fresno reports also indicate an interruption of the buying movement, which had been very heavy. Offers of 4 1/2 c for peaches are reported in that section, with growers asking 5c and no business. It is said that outside packers have offered 5c for the Thompson raisins. The New York Journal of Commerce says:

"The easier tone of the market for California prunes has checked whatever buying interest was shown previously at this end, and sales for October or later shipment out of the coming crop show up rather weak. More brokers were authorized to quote October shipment Santa Clara stock on a 6c f.o.b. four-size bulk basis at 6c for 40s to 60s, and in at least one quarter it is intimated that 5 1/2 c might be done. Such offerings, however, seem to come entirely from San Jose, the Fresno packers declining to meet the cut. Some of them have withdrawn from the market as sellers.

"Apricots for July-August shipment out of the current season's pack are decidedly firm, but while prices are on a high level, there is a wide variation in quotations, as to seller and sec-

tion of production. For instance, Blenheims in 25-lb. boxes are quoted at a range of 13 to 14½c for extra fancy, 12 to 13½c for fancy, 11½c to 12½c for extra choice, and 11 to 11½c for choice, f.o.b. In most cases Moor-parks are held on the f.o.b. basis of 14½c for extra fancy, while Royals in 25-lb. boxes are offered at 10½c for choice, 11¼c for extra choice, and 12½c for fancy, f.o.b. Coast. In 50-lb. boxes some packers quote the latter variety on the basis of 11¼c f.o.b. for the three grades. Peaches are dull and unchanged.

"There is little demand for spot seeded raisins at present from this quarter, and less for forward shipments out of the old or new crops. In seedless varieties there is reported to be a good consuming trade and a firm market owing to the strong statistical situation."

Evap. Apples, 1914.....	Nominal
Apricots, 1914	9 @ 9½c
Figs: White, 1914	3¼c
Black	Nominal
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	6 @ 6½c
Peaches, old and new.....	4 @ 4½c
Pears	Nominal
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4 c

Citrus Fruits

With 200 to 225 carloads of Sweets, Saint Michaels, Bloods, and Navel oranges leaving southern California daily for the last two weeks, the Eastern markets are decidedly easing up on account of the arrival of some of these shipments and the proximity of others. Producers, too, are anxious to get all their stock on the market before valencias have the call. Prospects for the latter look promising.

On the New York auction Monday, May 25th, 34 carloads of Navels were sold, ruling about 15c lower, prices averaging from \$2 to \$3.45 for Navels, while three carloads of valencias brought \$2.60 to \$3.45.

In other Eastern auction centers similar prices rule, with Philadelphia perhaps a trifle stronger.

Nothing of particular interest is reported on the lemon situation and little change is expected until the warm weather begins to bolster up the demand.

The total number of carloads sent East to date from southern California is 26,458 oranges and 1476 lemons, a total of 27,934, as against 10,156 oranges and 1341 lemons, a total of 11,497, up to the same date last season.

In San Francisco no change has been made in the local prices this week, citrus lines receiving little attention owing to the increased supply of deciduous fruits.

Oranges: Navels, box.....	\$1.00@ 2.50
Valencias, box	2.00@ 3.00
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box.	1.50@ 2.50
Lemons, box	2.00@ 4.00
Limes, case	9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Comb: White	12 @13 c
Dark	10 @11 c
Amber	8c
Extracted: White	7 @ 8 c
Amber	4½@ 6 c
Off Grades	3 @ 4 c

HOPS.

1913 crop	15 @17½c
1914 crop	14 @15½c

Live Stock.

Values are still well maintained lo-

cally, but more stock is being marketed than for some time past. Lambs are quite plentiful, and several large shipments have been sent East.

Steers: No. 1	7¼ @ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1..	6¼ @ 6½c
No. 2	5¼ @ 6 c
Bulls and Stags	3½ @ 5 c
(Grass-fed cattle, ¼ @ ½c less.)	
Calves: Light	8½ @ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy...	8 c
150 to 250 lbs.....	8¾ @ 9 c
100 to 150 lbs.....	8½ @ 8¾c
Prime Wethers	5¼ @ 5½c
Ewes	4½ @ 5 c
Milk Lambs	6 @ 7 c

WOOL.

According to local dealers, most of the California clips, except in Mendocino, have been sold. There has been a good demand in the East and prices are firm, a slight advance being made in the northern California wools.

Spring Clips:	
San Joaquin	12@14c
Humboldt and Northern....	16@21c
Calaveras	14@18c

HORSES.

The local market is running along in about the same groove as for some weeks past, with few buyers taking any interest, and few horses are being shipped in from outside points. There is a fair demand for desirable work stock in the country, however, and some good-sized sales are being held at outside points.

DECIDUOUS SHIPMENTS.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

The movement of cherries until Thursday, May 21, was practically unbroken since the opening of the season; but, on account of the recent rains which were prevalent throughout the fruit-producing districts of the State, the damage to the Royal Annes has been very severe and in some sections the Bings, Lamberts, and Ore-gons have been seriously injured. The extent of the damage, however, cannot be determined for three or four days. This will somewhat affect the loading of assorted cars, which had just commenced at the time of the storm.

Apricots, though slightly damaged by the rain at Winters and Vacaville, are now moving in car lots. The supply will not exceed 35% of normal, but as the quality is exceptionally fine, running to good sizes, we anticipate a satisfactory market throughout.

Early peaches—Mayflower and Alexander—are now moving in part car lots; likewise Clyman plums, with a scattering of Formosa.

The Barlett pear crop, though light, is of superior quality. The annual drop has been considerably heavier than last season. Cannerymen are offering \$50 and \$55 per ton f.o.b. shipping point.

Offers of \$20 to \$40 per ton have been made on Cling peaches, but buying has not been made freely, as it is not yet determined what the Phillips Cling crop will amount to in the San Joaquin valley. This crop last year was very heavy and was the cause of reducing the price on clings to less than the estimate made early in the season.

The demand for assorted cars in the north and west is very brisk, and, as the season is considerably in advance of last year, a great many of the early varieties should arrive in the East before Georgia is ready to move Early Belles and Carmens.

Unless something unforeseen happens, there will be a very large crop of Tokays in all districts and an abnormally large crop of Malagas in the Fresno territory.

Owing to the increased demand for Emperors in drums last season, the packers anticipate a large portion of the Emperor crop to move in this manner.

Reports from the East indicate that the New York peach crop is very seriously damaged, with a fair crop of plums of all but Japanese varieties, which are light.

It is also estimated that Jersey and

Delaware will have only a normal crop, but Maryland and Virginia will produce a heavy crop. Reports from Georgia indicate that the crop will not exceed 4500 cars. About 60% is in early varieties, the first car of which will be Mayflowers, expected to move about May 25. The first car of Arp peaches will move about June 1, Greensboro about June 5, the first Carmens about June 10. On July 5 the first Elbertas will be on the market, and, as previously advised, owing to the short crop in Texas, it is not unlikely that Georgia will take advantage of Western markets that heretofore have not received any Georgia peaches.

To May 25, 79¼ cars of cherries, 8½ cars of apricots, 1 car of peaches, and 3½ cars of plums have been shipped from California.

The markets during the past week ranged as follows:

New York—Tartarians, \$1.60 to \$4.90; Rockports, \$1.50 to \$1.90; Pringle apricots, \$2.10 to \$2.25; Royal Annes, \$2.87½ to \$4.62½; Gov. Wood, \$1.75; Chapmans, \$1.80 to \$2.20.
Philadelphia—Tartarians, \$1.40 to \$1.60; Royal Annes \$1.95 to \$3.55.
Minneapolis—Tartarians, \$1.40 to \$2.15; Rockports, \$1.20 to \$1.75; Big-arreau, \$1.25 to \$1.65; Gov. Wood, \$1.25; Seedling Apricots, \$2.65.
Chicago—Tartarians, \$1.25 to \$2.35; Rockports, \$1.10 to \$1.54; Pringle Apricots, \$1.80; Royal Annes, \$2 to \$2.75; Bigarreau, \$1.61 to \$1.76; Gov. Wood, \$0.87; Seedling Apricots, \$2.80 to \$3.12½; Chapmans, \$1.26; Newcastle Apricots, \$2.33.

CLASSIFIED ADVERTISEMENTS.

Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

LAND FOR SALE.

VICTORIA, AUSTRALIA, WANTS settlers—Special inducements offered by State Government, which owns lands, water, railways and free schools. Excellent climate, resembles California; no extreme heat or cold. Small deposit and 3½ years for purchase of lands, adapted to every kind of culture—citrus fruits, apples and pears, wheat, corn, alfalfa, sugar beets, dairying, hog raising, etc. Ample markets. Exceptional opportunities in irrigated districts. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Box W, 687 Market St., San Francisco.

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CITRUS and olive land, Glenn county; soil gravelly loam and silt; rainfall 22 inches; air and water drainage perfect; absolutely free from frost; artesian water; has same elevation, soil and temperature records and is within 20 miles of the largest citrus and olive groves in California; owner now planting orchard; will sell 160 to 640 acres unplanted at \$75; financial depression compels sale at this very low price. Box 17, Pacific Rural Press.

20 ACRES Subirrigated land, 3¼ miles from Modesto in Wood's Colony; 8 acres bearing assorted fruit, 1 acre Thompson's Seedless grapes, 11 acres alfalfa; good improvements. \$300 per acre; terms ALVIN BROOKS, R. 5, Modesto, Cal.

10 ACRES ALFALFA, family orchard; barn, well and tank; small house, new buildings; close to town. Price \$4000. H. L. CRIPE, Patterson, Cal.

9.98 ACRES IN ALFALFA, small orchard, chicken houses, 5-room cottage; 7 tons hay included. \$4300, terms. J. H. DURBIN, Patterson, Cal.

BUY FROM OWNER—Two beautiful orchard homes adjoining Sunnyvale, Santa Clara county, Box 6, Sunnyvale.

FOR SALE OR EXCHANGE.

STEAM HARVESTING OUTFIT FOR SALE—BEST ENGINE, HOUSER-HAINES HARVESTER (SEPARATOR NEW), OIL WAGON, WATER WAGON, COOK HOUSE, TOOLS, ETC., everything complete for the field. ALL IN FINEST CONDITION and offered at a BIG BARGAIN. Terms. Entire outfit can be seen in Stockton. STOCKTON ICE & FUEL CO., 33 South Eldorado St., Stockton, Cal. PHONE 47.

Pittsburg — Tartarians averaged \$2.33.

Boston—Tartarians, \$1.60 to \$2.80.

PUBLISHER'S DEPARTMENT.

Work on the seventh edition of "California Fruits" is progressing nicely, and to those who have sent advance orders we can now promise delivery next week. The new edition of this book will contain more text than any previous one, and extra expense has been incurred by printing many of the halftones on plate paper. The binding will be handsomer, and altogether we expect to present a better book than any of the six previous editions. Send in your orders and get one of the first copies—the price remains the same as before, \$3 postpaid.

Have you sent for a copy of our new book, "One Thousand Questions in California Agriculture Answered"? You need this book on the farm and you will only realize its value after you have a copy to refer to. The price is \$1.50 postpaid, or a special offer is made in connection with a subscription to the RURAL PRESS. Send for it.

Again the number of new subscribers has passed the 200 mark during the past week. The writer of this department expects to leave in a few days for a six weeks' trip through the East, and our subscription manager says that he will get more than 400 new subscribers per week while we are away. That kind of talk makes it seem as though we could take a whole summer off—providing that the subscription men furnish the 400 real new subscribers and not the "talk" kind.

TREES AND NURSERY STOCK.

FOR SALE—Peach, apricot, plum, prune, fig, apple, pear, and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants; elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRANK & KOHMAN, Nurserymen, Box 1212, Fresno, Cal.

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AVOCADOS — Seedlings, 3 to 8 ft. 60c to \$1. Budded trees, \$3. All field grown. Discount on quantities. Magnolia Nursery, Whittier.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

EXPERT BUDDING of large trees. STEPHEN J. HESLOP, Delano, Cal.

MISCELLANEOUS.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin; it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

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SECOND-HAND WATER PIPE and screw casing. New threads and couplings and dipped in hot asphaltum. All guaranteed. Send us your inquiry. SHEETER PIPE WORKS, 306-8 Howard St., San Francisco.

WANTED.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.



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THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 23.

SAN FRANCISCO, SATURDAY, JUNE 6, 1914.

Forty-Four
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Dried Apricots—15 Cents to the Grower.

[Written for the PACIFIC RURAL PRESS.]

Two reasons enabled F. C. Willson, of Sunnyvale, to sell over 20 tons of dried apricots at an average of 15 cents per pound in bulk. The first reason is that the fruit was first-class and put up by first-class methods. The second is that he held it until late this February, in a sanitary storeroom.

Through the growing season, the 35 acres of Blenheim apricots receive Mr. Willson's personal attention, and when harvest time comes the prime large fruit makes it easy to get help; and the large fruit attracts the most buyers and the highest prices.

help is transient, and if good work is required, they will move on.

The apricots ripen first on the apex end of the sunny side. They are best for drying while they are as firm as possible, yet with the yellow color predominating strongly over the green on the shady side near the stem. They may be a little firmer for canning, but should be as yellow as possible. A good test is to cut open the ripest apricots at picking season; for, especially on young trees or in seasons of greater sap flow, the fruit often is riper at the pit than outside. The flesh should be a comparatively dark yellow to please the purchaser, but must be firm to hold its form when drying. In that condition there is the most sugar, the largest size, and the least shrinkage. If not firm, the fruit in drying will flatten out into "slabs," which go at lower prices.

Apricots are handled as few times as possible before drying, because each handling softens them and increases the number of slabs.



Apricot Drying at F. C. Willson's, Sunnyvale—Background Shows Stacked Trays for Finishing.

Blenheims are favored now instead of the formerly preferred Royals, which are too small here. The Moorpark and Hemskirkes for large fruit were considerably planted years ago, but poor, irregular bearing caused most of both to be pulled out or grafted largely to Blenheim. They ripened too unevenly, the sunny side being mushy by the time the shady side was fit to dry. The Blenheim is smaller than the Moorpark, but is a regular, heavy bearer, ripens more evenly, is well distributed through the trees, and is approved for both canning and drying all over Santa Clara valley and in other parts of the State.

Mr. Willson expects about 300 tons of green fruit from his 35 acres this year. Part of it will be sold to the canners if the price is right, otherwise they will be dried and held for good prices.

One irrigation per year is given the trees from the creek in seasons of normal rain. The water was put on the fore part of May this season, and the ground cultivated so soon as it was ready.

It is difficult to get pickers who will take enough care in getting all fruit that is ready, and in picking none too soon. Most of the

They are hauled in lug boxes to the cutting shed, a structure 30 by 60 feet, 10 feet to the eaves, with both sides made of doors which are hinged, to be raised in cutting season. This furnishes shade for the wagons of fruit while unloading, and increases the comfort of the women who do the cutting. The lug boxes are not heaped up, as that might crush some fruit. Cutters are paid 8 cents per lug box, and so great is the advantage of the large fruit that plenty of help is obtained even when neighbors with smaller fruit are paying 10 cents.

Experienced cutters take the fruit between thumb and one finger, and turn it quickly with the other fingers while the knife in the other hand makes one continuous cut around from the stem end through the suture and back entirely to the starting point. Beginners require several stops and starts to get around. The cut is made through the suture to get a smooth-sided half-fruit. It is cut into equal halves so they will dry evenly. It is cut entirely around because if a little bit is torn apart, it shows up ragged when dried,

(Continued on Page 642.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 2, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date	Normal to Date.	Maxi- mum.	Mini- mum.
Eureka	.02	35.56	45.10	58	46
Red Bluff	.00	33.03	24.61	100	56
Sacramento	.00	19.84	19.96	88	50
S. Francisco	.00	29.31	22.12	69	50
San Jose	.00	19.13	16.73	84	42
Fresno	.00	10.55	9.61	100	52
Independ'ce	.01	12.01	9.47	90	46
San L. Obispo	.00	30.98	20.44	78	46
Los Angeles	T	23.56	15.57	72	54
San Diego	.00	9.82	10.00	70	54

T means trace.

The Week.

California is apparently slopping over in uniqueness. It does not seem to be at all necessary to do in one week two things which she has never done before during the historic period. One such thing at a time is about all the world can appreciate and assimilate. And yet California has touched off this week two great spouters—each the greatest of its kind ever fired in this neck of the world since men remember: one a fountain of industrial oratory in the great valley; the other an outbreak of smoke from the crest of a mountain; both colossal eruptions of hot air. Reports from the University Farm as we go to press indicate that something like 600 people gathered at the opening of the hebdomadal college of horticulture on Monday, and probably twice as many during the week had their ears fanned at the rate of about thirty lectures a day. We shall give due attention to this matter next week, if our representatives survive. At the same time Lassen's Butte, the particular peak of the Sierra Nevada which guards the northeast corner of the Sacramento valley, as though jealous of the valley outbreak a hundred miles away, began to fume and attracted the attention of the rangers in the national forest reserve, in which not even mountains are allowed to smoke—giving to California the only living volcano in the old-fashioned United States. It is surely an attraction which even the most enthusiastic promoter of the Panama-Pacific Exposition never dared to hope for—although it is suspected that the Road of a Thousand Wonders, which monopolizes the sights of this mountain, may have dynamited old Lassen without the consent of the State Railway Commission. But it matters not how it came about. California has a fresh, warm volcano in a place where hot rocks cannot hit anybody and where

torrents of burning lather can roll around all they please without reaching human habitations. Tourist agents can now promise their clients safe sight of the only living volcano this side of the ocean. The only tinge of sadness in our good fortune is the thought of sister Oregon for her dead, water-soaked craters must surely go out of commission as attractions for tourists.

Can a Farmer Reduce His Hiring?

We have several letters on other pages of this issue from readers who desire to express themselves on the problems of hired help which are now confronting California farming. These are all worth while whether one agrees with their contents or not. The situation is so serious that one cannot afford to disregard any view honestly held as the product of individual thinking and experience. Naturally the first thought of any business man who finds harsh conditions involved in the hiring of help, is: can such help be reduced or dispensed with? Perhaps even the publisher of this journal has dreamed of bliss following the firing of his whole gang of obstreperous and querulous editors. And there are other dreams which are vain because, in the individualistic or corporate lines along which enterprise has thus far proceeded in the world, service must be hired and paid for according to the resultant of employing and serving forces. In the mind of farmers in this state while an arbitrary and unreasonable limitation of the hours of a working day is pending, it is natural to figure how far help can be dispensed with and leasing to those who can escape the problem resorted to. Such action largely prevalent would prevent the whole course of development in the state and such an alternative should not be forced upon those who now own and live by working the land in an American way. This consideration should influence the voting of non-agriculturists on the 8-hour law because to alienate the farming of the state would ultimately alienate everything. One of our correspondents pleads for the eight-hour law on the ground of the application of an improved golden rule to the situation: that as the farmer does not get any more for his labor than he gives to his hired help, the two might mutually change places and renounce the idea of ownership and all that. We do not care to pursue discussion along this line. There is, however, a real question as to how far the landowners can reduce his hiring help, if conditions should make such hiring too burdensome to be borne.

Multiplication of General Farms.

Men who work their own land certainly do have a chance to change crops in such a way that the farmer and his sons can get most from the land with least hiring and with least buying of supplies and probably net more clean profit than by the newer plan of farming with a bunch of hired help. The possibility of this can hardly be doubted, because it is really the policy by which the older parts of this country were settled and developed. In that older farming gangs of men were almost unknown. Farmers had land enough to allow them to live with a less acre-return; they exchanged labor with neighbors; they became really more fore-handed, independent and influential in their communities than the newer system of hiring, buying and borrowing has thus far

made the present generation of farmers. In fact the present problems of high interest, high wages and high taxes are largely the product of the newer system. We have no idea that farming will go back to the old models and policies. Men have to live in the generation into which they were born—and yet it is wise to think whether some of the old policies might not find some applicability and place in the newer system, which seems to be working, in some ways, ill. Specialty farms and intensive cultures make for the application of a maximum of labor on a minimum of land. In the case of a very small farm, such as are abundant in Europe, it means that the farmer and his family must furnish this labor themselves and live by eating the product of it—with very slight surplus to contribute to the general food supply of the country. In the case of the large specialty farms, such as are increasing in numbers in this country, it means that the farmer must use much capital and much hired labor and has to face many problems of the manufacturer, which were almost unknown in the older style of general farming. In contrast with both small and large specialty or intensive farming; is this old style of general farming which used more land, less labor and produced staples in large quantities for the public food supply.

What Is a Fair-Sized Farm?

What kind of a farm will best serve the requirements of the consuming public and make for the general prosperity of the state? For two or three decades in the earlier history of the state, when the valleys and hillsides were largely covered by old land grants, there was a constant cry that California must grow by the cutting up of the ranches and the multiplication of farm homes. It was a correct diagnosis of the situation, and the present prosperity of the state is largely due to the fact that so many large ranches were broken to pieces and the land put to higher agricultural uses. But for the last two decades the cry for small farms has continued and claims for wider prosperity have been based upon the realization of smaller and still smaller farms—such claims being enforced by reference to small-farm prosperity in France, for example, and which, when one looks closely into it, must be seen to be a style of prosperity which we do not want. Subdivision has proceeded in some parts of Europe until land parcels became too small even to support a family which did all the work for itself, and the government was forced to stop subdivision and finance the thing so that some of the family could go into other industries. The result has been the decrease of births and a declining population, which is a great problem in France at the present time. It is probably true then that the public interest in this country may demand that the exhortation to small farming shall not be carried too far. European experience has shown that there may be "congested districts" in the country, somewhat analogous in their degradation of mankind to the tenement districts of the cities, and when such are brought about it takes both legislation and public bounty to lift people out of them. That such a thing is not impossible in California is seen in small parcels, of the very little land upon which a family can subsist by farming. Though the statements may be true enough in specific instances, they are usually unsafe as generalizations and few of

them would outline a course of development which would continue the correct standards of American citizenship or contribute to the general comfort and prosperity of the country.

We have been much interested in reading Bulletin 341 of Cornell University, department of farm management, in which G. F. Warren gives conclusions bearing upon the question of the size of farm which is best for the farmer and for the country. Mr. Warren says:

"One of the popular suggestions for reducing the cost of food is to reduce the size of the farms. But for general farming our (Eastern) farms are now too small. Machinery makes it possible for a family to work more land than formerly. The farm that uses two or three workers is a family farm. It will employ a farmer and his sons. Four horses are required for farming with modern machinery, but four horses can raise from 80 to 100 acres of general farm crops. Pasture land, woodland, roads and farmstead make up half the farm in most sections, hence 160 to 200 acres is usually required for efficiency in general farming. With small general farms it is necessary to keep four horses even if the area is too small to keep the horses busy. There is no benefit to the city dweller in having small farms if the farm horses eat the product. The moderate-sized general farms contribute more per acre to the city food supply than do the small general farms. Truck and fruit farms may be somewhat smaller, but only a few such are required to supply our needs. The vast majority of farms must raise hay, grain, potatoes, live stock and milk. Those who would keep the boys on the farm defeat their purpose when they would reduce the size of farms. The four-horse farm is a two-man farm. If farms are too small to provide profitable work for the sons, they very wisely leave."

What Is California's Interest in the Case?

"But," the eager subdivider may say, "all that does not apply to California. Our farming is intensive; our farms are fruit farms." Is that true, and will it ever be true of all our farmers and of the whole state? We believe not, and we have from time to time shown that the upbuilding of California is broader than the fruit interest, great and glorious as that is. The latest figures along this line are those cited by D. O. Lively in a public address last week. Mr. Lively, as our readers know, is the live stock head of the Panama-Pacific, and therefore the finest "peaches" and "pippins" in his horizon have hair, horns or hoofs on them, but still he may be trusted in compiling figures from the United States Department of Agriculture which show that sales of the various commodities of California in 1913 were: Live stock, dairy products and poultry, \$130,740,748; grain and cotton crops, \$126,516,800; orchard and vineyard products, including the wine industry, \$114,513,120. This means, of course, that California's present interest is more in lines of general farming than is generally supposed, and there is no reason to believe that it will ever be relatively less than now. Therefore it is important that we should have due regard for the economic law which determines size of farms for such cropping as California farmers will most largely pursue. Such cropping cannot be profitably done with forty-eight hours of labor in a week, and those who must own them under economic law, no matter what the statute may be, will be those

who are working for themselves and hiring as little as possible. Obviously, then, those who are planning to get more wage-earners on farms by reducing the hours of labor, will really hasten the operation of the economic law and will thus reduce what they aim to increase. Our readers who plan to decrease their hiring by selling their land will take the hint that perhaps they should buy more land, change their cropping and by better policy of production gain greater crops and hold their farms as family enterprises of dignity and independence, as the farms have been which have made America great.

The Death-Blow to Piece Work.

The fundamental objection which we have to the proposed universal eight-hour law is that it makes a slave of everybody. One can neither buy or sell labor as his needs require or as his judgment approves. Our fruit farms, owing to the perishable character of their products and the imperative requirement of timely and protracted work in protection from bad weather, pests and other intrusions, cannot possibly succeed under arbitrary labor limitations. But there might be for fruit growers some relief by job-contracts or by piece work, if these were not also prohibited by the eight-hour rule. It matters not how indispensable it may be to the employer or how desirable to the piece-worker, the latter cannot be active for pay for more than eight hours on the place of a single employer without sending him to jail. Thus apparently disappears the chance for the fruit grower or other intensive producer to secure the relatively larger amount of hired labor which he requires. He is put to it now to find enough even when he pays by the piece and not by the hour and while piece-workers like to make long hours for their own profit. The effect, then, would be to force people out of the more intensive undertakings and require them also to have recourse to using more land and less hired help in accordance with the economic principle suggested above.

Queries and Replies.

Querists must submit full names and addresses.

Aerial Potatoes

To the Editor: Can you tell what causes the tubers on the potato plant I am sending you to appear upon the plant instead of below the ground? This plant appeared in a small patch of potatoes and was the only one to act so. There was no sign of any tubers below the surface of the ground.—G. B. M., Los Angeles.

The plant has as good an outfit of "aerial tubers" as we can remember seeing—some of them quite two inches in length. They come about in this way; normally the potato tuber is an enlargement of an underground stem, formed by the action of the return flow of the sap of the plant. The upward flow of sap is largely through ducts in the central parts of the aerial stems. The downward flow of sap, after its elaboration by the leaf-surfaces, is through the tissue which lies just under the skin or bark of the stem and it deposits its burden in the tuber underground. When this tissue is atrophied or injured in some way so that the return-flow of sap cannot pass along to making tubers underground it goes to work above the injuries and makes tubers in the air. The tubers are simply modified stems, either above or below ground, as conditions

may determine. When tubers form above there are none below and, for the reason stated, there cannot be. Injury to the stem may be mechanical—such as a scrape with the hoe, the work of an insect or a local disease zone, perhaps. Anything that holds up the sap may do it, if the plant is otherwise vigorous enough for it. Fortunately it is of rare occurrence.

Leaf Lice and Syrphus Flies.

To the Editor: As one of your constant subscribers and readers, I feel free to send you a box of twigs, leaves, and flies by parcel post. I do not know whether the flies are responsible for the damage now taking place on my prune trees or not, but send them as suspicious. There are thousands (so it seems) on the trees, and I am in doubt as to what steps to take to save my trees and crop. The leaves are curling and seem to be dying. Can anything be done.—Cap. Los Altos.

You have a big load of plum aphids. The flies of which you send specimens are "syrphus flies." They are recognized by their darting movements and the bright yellow or white stripes upon the backs of their abdomens. They are beneficial for their offspring will feed upon the lice, but it is doubtful whether they will catch up with the lice before the latter kill many leaves by their sucking and will cover other leaves and the fruit with their sticky honeydew, which becomes smut later. Therefore you should spray at once with any remedy you use for thrips—using good force and a nozzle which will throw it against the undersides of the leaves where the lice congregate. Such spraying should have been done before the lice became so numerous. The chief trick of a leaf louse fight is to hit early.

Diabroticas.

To the Editor: Can you tell me how to get rid of a small green bug resembling the lady bug? This one has black spots on its wings. They are eating our corn, beans, and other garden stuff, and have now begun on the peaches. Is there a spray or powder of any kind that can be used without injury to the fruit and vegetables? They are getting pretty thick and we have failed to get anything that would check them.—M. A. R., Knights Ferry.

They are diabrotica soror, an old pest, which fortunately is not always abundant but sometimes very grievous. When they are working on foliage on plants which have no ripening fruit, or of which the leaves are not eaten, a spray of arsenate of lead such as is used for the codlin moth larvae, is quite effective. From ripening fruit or vegetables they can sometimes be driven away by smoke from fires on the windward side. They can be shaken early in the morning from trees or tall plants onto a catching sheet. We know of no easy way with them.

Preparation for Re-planting Pears.

To the Editor: What is the approved method of handling and treating the soil from which "blighted pear trees" have been removed, with the idea of replanting?—L. B. J., Elk Grove.

Plow deep and work down well for summer fallow and kill out weeds and save moisture by summer cultivation; or work in the same way and put in a summer-cultivated crop. Stock beets will give you a fall feeding crop if you still have moisture enough to start them: otherwise corn or squash, etc., cultivating as long as you can. No particular "medicine" is called for.

Why Try to Own the Farm, Anyway.

To the Editor: In reading the PACIFIC RURAL PRESS of May 2 last, under the heading of "Farmers' Views of an Eight-Hour Day," I was considerably amused at the views of L. B. Johnston and others whose names are not published, and I think I can show my brother farmers where they are looking up a tree for a ground squirrel. Let us look in the other direction.

Perhaps Mr. Johnston with his 35 years experience in farming will think that I with my 10 years experience have no right to dispute him, nor is it my intention to try to, for I know that all he says about the 12 to 16 hour day of the small farmer especially, is true. I think I have put in my share of them and know something about it. I also agree with him that farming families are not retiring into the banking class at any alarming rate; also, as he has stated, farming in California is no get rich quick scheme but quite the contrary. He is right when he says: "It is a good healthful pursuit and if followed year in and year out with economical management will result in a fair financial gain."

Although Mr. Johnston admits that with persistence and economical management, hard work and long hours, that the average farmer can make a small gain, still he does not seem to realize that in doing this that he is a mere wage slave, the same as the man whom he employs.

In another place under the same heading, another writer, whose name is not published, says: "Really it is much better to be the hired man now days than to be the farm owner. After paying the labor, taxes, fire insurance and grocery bills, nothing is left for the poor farmer for his labor, care, responsibility and self sacrifice. No pleasure, rest, or vacation for the tired farm owner," etc.

I know that every word of this is true, but is this writer not also acknowledging himself a wage slave worse off than the man whom he employs?

So now let us proceed. I will venture to say that in no other industry in this big round world of ours is the hired man worked harder or longer hours with as small pay as the farm laborer, especially on the smaller farms where the highest types of modern machinery is not employed. [This may do if you mean it to apply to all the farm laborers in the world. It is not true of this country.—EDITOR.]

To do justice to the farm owner I will say that he works just as hard or perhaps harder. In no other industry is the hired man exploited as heavily as on the small farm. Still the farm is not getting rich. On the contrary he is merely existing—and why? Is it not because the farmer is exploited so hard by the trusts and monopolies who buy his produce, that he in turn must exploit his hired help to the fullest extent in order to make an existence?

The "trusts" (for do not think we do not have them) have it figured out just what the farmer can exist on and they give him just enough for his crops that he may have just that bare existence. It is not the labor condition that is working the hardship on the farmer but the other end—the market condition. It is the dealers

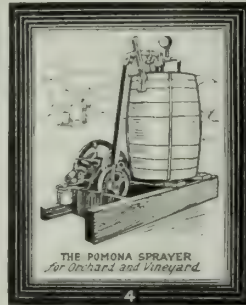
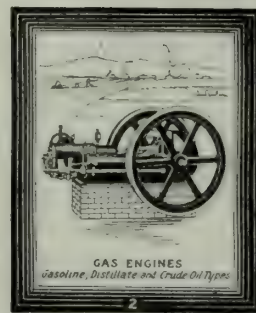
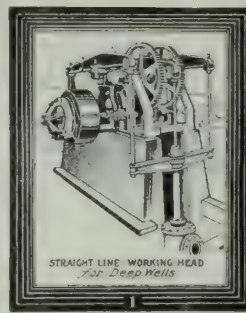
to whom the farmer sells his produce who are fleecing him. He buys your produce at a certain low price and puts it on the retail market at about 100% profit which the poor consumer has to pay. The middle man or "parasite" is exploiting both the producer and the consumer and doing practically nothing himself. Sell your produce to a dealer and then go around and buy some of it back and you will find where the hardship is being worked on the farmer—instead of blaming our fellow laborer who is only working for an existence in this world same as we are, so don't blame him. Of course there is one farmer who may escape these conditions in this way and that is by hiring his work done and exploiting his laborer as hard as he can or in other words, pay him about 20% (which is an average wage) of the product of their toil and then sell your produce direct to the consumer and in this way escape the exploitation of the middleman. You then derive the full value of your produce but you pay your labor only 20% of the value of their toil. In this way the farmer may get rich but as for a man to think that he can get rich by the product of his own toil without exploiting others is nonsense. He cannot do it under the present system.

I think the trouble with most farm owners is that because they own a little farm they think themselves better than the common laborer when in reality they are of the same class. The small farmer is the "cats paw" for the trusts and capitalists for the trusts exploit him to the full extent and gives him a little "hot air" and he looks up to them and is ready to kick his fellow wage slave and lay the blame for his distress on to him instead of standing by him and co-operating with him for a betterment of condition for all humanity.

So let's not kick about the 8 hour work day; let them gain it and then, as our friend says, "It is better to be a hired man now days." Let us step back, or I should say, forward; anyway let the farm go and don't worry about it and be a wage worker, for you agree with me that that is all you are now anyway and work considerably more than 8 hours per day.

I think by that time our eyes will be opened sufficiently to see that it does not matter much about the 8-hour day but let us turn our attention to the more important factor viz: the cause of such conditions. Let us not then censure or blame our poor fellow wage slave for God pity him, neither do we blame the capitalist or trusts for we would do the same thing if we had the same opportunity, but under the name of humanity and justice let us cast our votes to abolish the abominable rotten system which permits of such damnable exploitation and robbery.—THEODORE ROBINSON, Hallock.

[Why did you not go on and say abolish individual ownership of everything; destroy individual initiative and incentive; root out of a man everything that makes him labor for his own home and the welfare of his children. The tyranny of trusts, should of course, be rendered impossible; fair distribution of the results of enterprise and labor should be secur-



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ed—but plucking from the heart of a man individual responsibility and energy, which make him great and useful to the world, and banishing from his outlook, opportunity, which opens the way to greatness and usefulness, seems to be the method of a proposed world reform which is the greatest delusion of modern times. Still the discussion of its methods and points of view are helpful in the general development of the race—just as close-looking and deep-thinking always are.—EDITOR.]

FARMING ON THE 8-HOUR LIMIT.

To the Editor: I have been reading your editorial on the 8-hour law in issue of April 4th and I think you have hit it pretty well. I have always felt for the laboring man as I used to labor for others but now am laboring for myself but if that bill carries I am ready to labor for others again as it will be impossible to pay expenses on my own ranch. I think their bill calls for nothing less than \$2.50 per day. What will 8 hours amount to on a scorching hot day in the alfalfa field or in our fruit orchards with our fruit dropping and rotting? Take the milker, it will take him his 4 hours night and morning each to do his work, then if an animal is sick I suppose it is to die.

From what source did this bill get a start? Farmer friends, when will you organize and have men at Sacramento and Washington to make laws for you and to fight those laws that are against you? We have some farmers organizations that are nation-wide. Do you belong to them and help support them or do you sit back and reap the benefits they sacrifice themselves for without giving them any aid?

I also see in May 16 issue a man has 70 acres and is going to sell to reduce to what his family and himself

can take care of. Now that is just what I am trying to do; I have 80 and am trying to sell 30, then I and my family can take care of the balance by a little changing work with neighbors. I find a good many are going to do this if this becomes a law and others are talking of raising less produce, thereby employing less help.—D. F. CONANT, Modesto.

WHAT A FARMER PROPOSES TO DO.

To the Editor: This is what one farmer proposes to do in case the amendment favoring an 8-hour day and \$2.50 per day as a wage, should unfortunately win.

I propose to rent my holdings to Japs or some other class who can live cheaper than American employer can, and it is, I believe, reasonable to suppose that many others will be forced to do the same, as I do not believe the average farmer can stand the additional cost of production and live.

Let us see what it amounts to in my case: In 1913 my payroll, based on \$2 per day, was \$6,000; every cent of which will be taken from white labor.

Farming is a hazzardous business at the best and the enactment of more laws handicapping it, is to force us out.—M. E. ANGIER, Lodi.

[Both our correspondents presume that the pending amendment is to fix wages as well as limit service. As we understand it, the initiative amendment which is now on its way to the voters does not include a "minimum wage" proposition; that is expected to come later, if the first step gets through. That our readers may have their memories refreshed we repeat the pending amendment, which we first published in our issue of March 28, last:

"Any employer who shall require or permit, or who shall suffer or permit any overseer, superintendent, foreman or other agent of such employer, to require or permit, any person in his

employ to work more than eight hours in one day, or more than forty-eight hours in one week, except in case of extraordinary emergency caused by fire, flood or danger to life or property, shall be guilty of a misdemeanor and upon conviction thereof shall be fined not less than \$50 nor more than \$500, or imprisoned in the county jail not less than ten nor more than ninety days, or both so fined and imprisoned."

COUNTY ADVISORS KNOW CALIFORNIA.

Sonoma county recently decided not to have a farm advisor, partly on account of Horticultural Commissioner A. R. Galloway's report, part of which is printed below:

The work of horticultural commissioners is known to be largely advisory, as we are constantly called on for all kinds of advice pertaining to agriculture in general, as well as horticulture. It is therefore apparent that the proposed office of Farm Advisor would necessarily be nearly related to that of the horticultural commission. I suppose it is for this reason that we have been asked to address several meetings on this subject.

As we realize that the material prosperity of Sonoma county depends almost entirely upon the success of her growing agricultural interests which can be best promoted by intensive farming along scientific lines, we have expressed ourselves in favor of securing for the producers of our country every possible advantage that will enable them to get better returns for their labor. We believe that a farm advisor to be of service should be thoroughly acquainted with our local conditions and many types of soil, and should have practical knowledge of the production of our numerous crops, which include everything grown in California.

We further believe that the office of farm advisor and horticultural commissioner should co-operate in their work, each supplementing the work of the other, which would necessitate but one office equipment and prevent duplication of each other's work and avoid possible friction. What has led us to express this opinion is the fact that your Honorable Board, under this law, has absolutely no choice in the selection of a farm advisor; and we understand that the source of supply is from eastern agricultural colleges.

[That the qualifications were misunderstood is made plain by Dean Hunt of the Agricultural College and by Prof. W. T. Clarke who have the appointment of farm advisors for the State. Both emphatically say that all of the five county farm advisors already appointed, two of whom are not yet serving, are graduates of the University of California and have had two years of practical experience within this State. They add that whether future appointments are made from eastern or western men, all must be agricultural college graduates and all must have had at least two years' agricultural experience in California.

The horticultural commissioners' work is executive, not advisory; though most commissioners find themselves used practically as advisors. The University reserves appointment of advisors to itself in order to eliminate all local politics, the most fit man available being chosen. If his specialty in college was livestock, he is assigned to a county where live stock predominates; similarly for horticulture, etc.

His work is absolutely non-executive—his time must not be used for executive or office work; he is to investigate local conditions, agricultural and social, and give expert advice on individual difficulties of the farmers in his county. He keeps in close touch with agricultural investigations and gets answers from the University to questions he does not know about.

San Diego County Advisor Armstrong has headquarters in the same office with the Horticultural Commissioner. In Yolo county, G. H. Hecke is appointed Honorary County Advisor serving without pay, but having a paid assistant to do the active advisory work. So it is shown in practice that Mr. Galloway's desire for co-ordination of the work of the two offices may easily be accomplished.

Scarcity of eligibles for the position of farm advisor is due to the exacting requirements of the work. But few men are qualified by the necessary combination of tact and technical skill, of investigational tendencies and broad practical viewpoint, capable of quickly grasping all the conditions of a problem and applying the remedy correctly and promptly.—EDITOR.]

WHAT IS THE MATTER WITH THE GILEADS?

To the Editor: I have some four-year-old Balm of Gilead trees in my yard that are getting yellow leaves and have wet looking spots on the trunk and limbs. I cut into some of these spots and there is a pocket between the bark and wood filled with water. What would you advise me to do? They have made an awful growth and are about 35 ft. high.—R. B. O., Reedley.

[We do not know the cause of such trouble. Perhaps some reader has hit on it and can tell us. Apparently the cause is in the root which possibly may have struck alkali or something else which it does not like. The only treatment we can suggest is cutting back and using plenty of fresh water if the soil is light enough to drain well—or can be under-drained if you think the trees worth it.—EDITOR.]

GIRDLED ORANGE TREES.

To the Editor: Young pomelo and mandarin orange trees just imported from China had the bark eaten off to the level of the ground by rats on ship-board. Bark at the ground level is green and the roots O.K.—J. J. S., San Francisco.

[Cut most of the trunk from your trees leaving 6 or 8 inches above the green bark. Set them out and keep the stubs and roots moist (not wet) and set a bottomless tin can, or other such protection from wind and sun, over the stubs. If a dormant bud was left, it will grow. If it is above the originally inserted bud you will have the right variety, otherwise it will have to be budded again. If only a short length is girdled and not dried, keep the wood moist by wrapping the affected parts in several thicknesses of wet burlap. New bark will form as it would not on deciduous trees.—EDITOR.]

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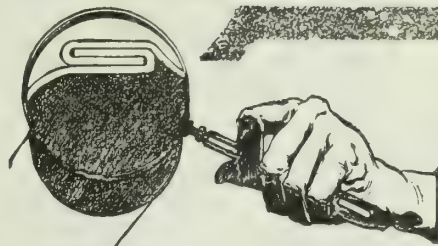
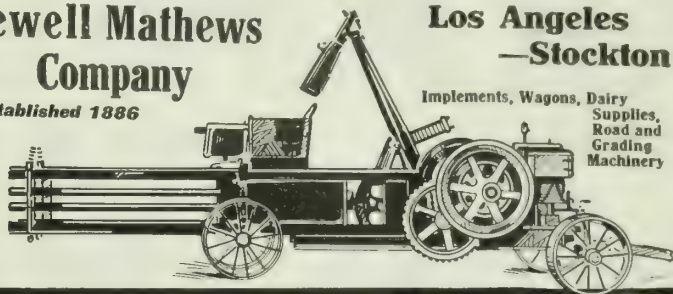
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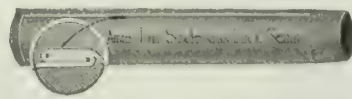
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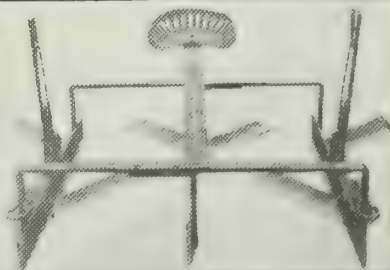
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(Continued From Page 637.)

and is less attractive.

A special point is made of laying the halves close together, cut side up so that when they come out of the sulfur houses with the "cups" full of juice, none of it will be spilled; for spilling means loss of juice and sticking of fruit to the trays.

Since some time necessarily passes after the fruit is cut until it is sulfured, the edges dry a little and the sulfur does not take hold of them so well. Then they darken, which is objectionable from the selling point of view. To avoid this, Mr. Willson sometimes sprinkles the fruit with a little very weak solution of salt water, which gives sulfur a better chance. But he thinks this makes a longer time in drying which also darkens the fruit and so is not so sure the sprinkling is a good practice.

The trays are about 3 by 6 feet with 1 by 2 inch stuff edgewise for sides, extending 3 inches beyond the ends of some, for handles. These are piled 24 deep on cars which run on a track through the centre of the shed. Each tray projects alternately several in-

ches endwise over and back of the one below it so the sulfur fumes can get in. Each carload is run into a separate sulfur house.

The four sulfur houses are about 4 by 5 by 8 feet and are covered with building paper inside and out to make them practically air tight. The door is the whole end which is hinged at the top and provided with a 9-foot 2 by 4 which projects upward 6 feet and slightly forward with a weight at the top. When the door is raised, the weight holds it open. The car is run in on a track made of angle irons on 2 by 4's, and about 2½ pounds of sulfur are laid on a paper in a little pit in the ground near the front end of the house. The paper is lighted; the door fastened shut; the sulfur burns 4 or 5 hours when the fruit is replaced by another load. Last season, three additional portable sulfur houses were used. They were made by nailing building paper over a light frame which is lifted by handles and set over the car as it stands on a field track. But Mr. Willson proposes to build concrete sulfur houses at the earliest opportunity and use T rails for the tracks. Concrete houses will be truly air-tight and will save both time and sulfur. The price of sulfur has been 2½¢ per pound for several seasons.

More is necessary for fruit that is more firm. The object of sulfuring is to discourage insects while drying, and principally to avoid the dark color which makes the fruit unsalable, and which is due to the longer exposure necessary to dry unsulfured fruit.

When the apricots are brought out of the sulfur house, each "cup" where the pit was, is full of juice, especially in the riper ones. This juice is absorbed into the fruit while drying in the sun, making it somewhat syrupy, for of course the moisture in it evaporates.

A track runs through the middle of the dry yard which is nearly two acres recently cut grain stubble. Two tracks will be put in to save labor in distributing the trays. The yard is surrounded by orchard trees and is fully 200 feet from the road to avoid dust, though the road itself is not very dusty.

About four days of good bright weather, the fruit lies in the yard, after which, being about ¾ cured, it is stacked in piles to finish in semi-darkness, for longer continued sunlight would darken its color. If taken up too soon, they curl up with the slower finish and are then hard to pack neatly.

The small sizes dry more quickly and unless kept separate from the beginning (which is ordinarily impracticable) make a poorer quality of fruit. At any rate they are picked out of the trays by hand, as are also those soft ones that have flattened out, into separate grades. They are stored then in bins as much as 5 feet deep in a tight clean house built for the purpose, until a buyer comes who will pay Mr. Willson's price.

Does all this special care pay?

"It costs considerably extra to care for fruit as I do, and I can't say I make more money than the other fellows, but I never could bring myself down to the production of inferior fruit," says this man whose product is known far and wide as the best to be had.

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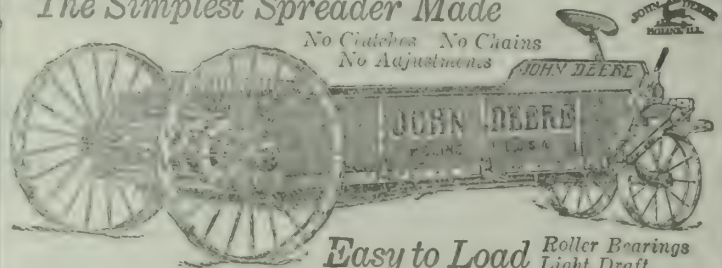
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The Spreader with the Beater on the Axle

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No Clutches No Chains
No Adjustments



Easy to Load Roller Bearings
Light Draft

Decided Improvement in Spreader Construction

Up to this time every spreader on the market has been constructed along the same general lines.

The John Deere Spreader, however, is different. It is entirely new and there is nothing like it on the market. The beater is mounted on the main axle. There are no strains and stresses on the sides or frame and no clutches or chains to give trouble.

The John Deere Spreader is low down, easy to load, and always ready for business. It cannot get out of order.

Beater on Axle

All the working parts on the John Deere Spreader are mounted on the rear axle. There are no independent studs or shafts to give trouble, nor chains or sets of gears to get out of order. All strains and stresses are borne by the main axle and are not transmitted to the side of the box or the frame of the spreader.

Power to drive the beater is taken from the rear axle and operates through a planetary transmission similar to that used on automobiles mounted on two rear axle within the center.

Light Draft—Few Parts

There are at least two reasons why the John Deere Spreader is the lightest draft spreader made. One is that it has four sets of roller bearings; two in the front wheels and two on the main axle and beater. They reduce the draft materially.

Another reason is that the John Deere Spreader has so few parts. It has about 150 less types of castings than the simplest spreader heretofore made. It is only natural that the fewer parts a machine has, the easier it will operate.

When the John Deere Spreader is out of gear, it is simply a wagon.

Easy to Load

The first three feet manure is lifted with an ordinary spreader are easiest of all. The real hard work is from this height to the top of the ordinary spreader.

The John Deere Spreader is low down. It is only necessary to lift each forkful

three feet. Thus, the hard work of loading a manure spreader is done away with. Besides, the person doing the loading can see inside the spreader at all times. Each forkful is placed exactly where it is needed.

Easy to Load

No Adjustments

On the John Deere Spreader no adjustments are necessary. On the simplest spreader heretofore made, it was always necessary to make from ten to twenty adjustments before the machine would work at all.

The John Deere Spreader is thrown in gear by moving a heavy dog back until it engages a stop at the rear of the machine. No clutch used.

Positive Non-Racing Apron

By the use of a very simple locking device inside the ratchet feed, the apron is positively locked against racing when spreading up hill or over exceedingly rough ground. The result is that when spreading with the John Deere Spreader the manure is always spread evenly. This is not possible on any other ratchet feed spreader made.

Change of Feed

Change of feed is accomplished by a double shoe which is moved from the seat. This shoe determines the number of teeth the ratchets engage at each stroke. The John Deere Spreader has a variation of from five to twenty-five loads to the acre.

Substantial Steel Frame, Like the Modern Railway Bridge

Both the side sills in the John Deere Spreader are of high carbon channel steel with the channels turned to the inside. Into these hollows are fitted four large wooden cross sills. Being bolted, these cross sills can be kept tight, insuring rigidity and alignment of frame at all times.

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CALIFORNIA

Yellow Dent Seed Selection.

[Written for the PACIFIC RURAL PRESS.]

That yellow dent corn can be profitably grown in California is being demonstrated on the Stanford Vina ranch in the Sacramento valley. Two years ago this spring W. G. Stimmel, the superintendent of the ranch bought eastern seed from Morse & Co. to plant 50 acres.

From that crop he selected seed for last year by four or five careful sortings. It was hung on strings in a warehouse all winter, and did not need testing in the spring because of our mild temperatures.

This seed was much better than that of the first year, as was shown by the increased yield to 40 bushels by weight per acre last fall. The best was saved for this year's planting; and the rest of what was selected as prime seed corn was shelled and sold for seed at 4 cents a pound, the butt and tip kernels having been discarded because they do not plant a regular number of kernels per hill.

The kernels are deep, hard, and in every way as good seed corn as may be seen on the eastern markets. It is called "Stanford Yellow Dent" because the ranch is owned by Stanford University.

The seed is far better this spring than before, and there is every reason to believe it is thoroughly acclimated, and in a year or two will produce as large a yield as the best in the corn-belt States, for the rigid seed selection will continue.

Corn not used or sold for seed, is ground and fed with barley, etc., to the dairy cows.

Last year the seed was drilled with the usual eastern corn planter; this spring a loose ground lister drilled it a few inches apart in rows 3 feet apart to the entire satisfaction of the management.

It was planted the first week in April, which was rather late on account of the weather, and has been cultivated twice already. It will be cultivated twice more as in the East, and husked in the field, the stalks being dragged down and disked before plowing for the next crop.

BLUE GRASS TURNED BROWN.

To the Editor: My lawn was planted four years ago, with Kentucky blue grass. Two years ago it started to turn brown as if it was going to die down. Would you advise replanting with other kind of seed, or is there a disease that attacked the lawn? I have a rich heavy loam soil, and give plenty of water.—H. O., San Carlos.

COMMENTS BY PROFESSOR GREGG.

To the Editor: It is quite possible that some insects may be the cause of the blue grass lawn turning brown. We know that perhaps the most troublesome of the minor insects are the red and black ants. The most effectual means of attack in their cases is to poison them with bisulphide of carbon. The work can be quickly accomplished and though it is not a particularly pleasant operation, it is not so objectionable that there is any excuse for avoiding it. One or two tablespoonfuls of liquid may be carefully poured into the openings of the ants and a handful of soil should be thrown immediately over it and packed down tightly. It should be remembered that this poison is highly inflammable and

the vapor is dangerously explosive.

The white grub or June beetle will occasionally gain a foothold in lawns, especially those that are insufficiently mowed. This pest burrows in the ground and feeds on the roots of grasses, causing very serious damage and often resulting in entirely killing out all plants. When patches of brown occur on a lawn in summer, when other cultural methods have been properly met, the presence of the white grub may be suspected. On lawns which cannot be plowed up in the fall and chickens allowed to forage on these fat grubs, kerosene emulsion sprayed over the lawns has been found a fairly good remedy. The use of a

heavy roller has also been satisfactory in crushing the grubs in light soils.

Earthworms are also quite troublesome in lawns and are an indication of improperly drained top soil. It is hardly possible, however, that they would be the cause of the condition stated in the letter.

There are also a number of forms of wire-worms that oftentimes materially damage the crown of grass plants. The use of lime or kerosene emulsion will usually control these insects. In this case I would advise liming and the use of nitrate of soda in order to bring the lawn back into condition.

There are, of course, several fungus diseases also that may attack lawn plants, as the fairy ring fungus. Dressings of lime will assist in con-

trolling the spread of this disease.

You will understand that it is very hard to diagnose cases of this sort without seeing conditions as they actually exist. It is possible, therefore, that I have not hit the point at all.

J. W. GREGG.

Professor of Landscape Gardening and Floriculture.
University of California, Berkeley.

The Raker bill, which has to do with the standardizing of apple boxes, was favorably acted upon by the House Committee, at Washington, D. C. last month. The bill provides for a box of the following dimensions: depth 10½ inches, width 11½ inches, length of box 18 inches. Boxes not up to this measurement must be marked "short box".

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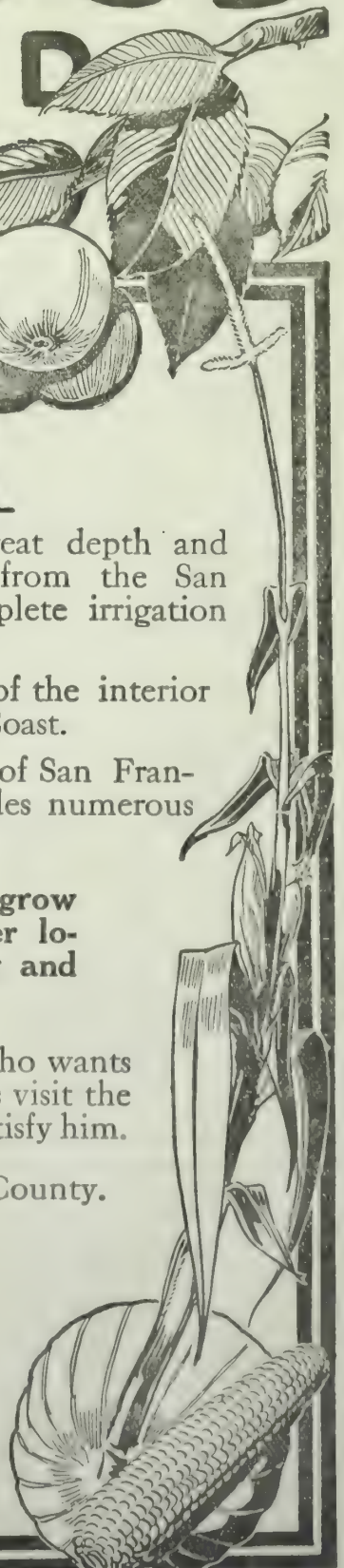
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What Plums to Pick.

[Written for the PACIFIC RURAL PRESS.]

A freight train of 50 cars is a long one. Thirty-four such freight trains would hold a lot of plums. Yet that many fresh plums were shipped from California in 1913. If the different varieties were shipped by all companies in the same proportion as the California Fruit Distributors, the Tragedes had a big lead in 1913, 314,000 crates having been shipped. Other varieties of California plums were consumed by outside people in the following quantities: Burbanks 169,000, Hungarian and Gros (which are the same) 146,500, Wickson 124,000, Climax and California Red 104,500, Grand Duke 80,500, Giant 70,000, Yellow Egg 64,500, Kelsey 51,500, Diamond 50,000, Santa Rosa 19,000, Abundance 14,400. These figures come from an authoritative source and indicate only the relative importance of varieties in last year's shipments, with nomenclature slightly confused.

Few Tragedies are being planted on account of poor pollination. Abundance, Hungarian, Gros and Clyman are being worked over and few new trees planted. In the principal fresh plum shipping sections, which are in Placer, Sacramento, and Solano counties, the new varieties of Japanese plums originated by Luther Burbank are being extensively planted and top-grafted on other varieties as well as on peach trees. Probably the most popular of the recent varieties already established, is the Climax, and the acreage of this is increasing in spite of the rapid strides of the Formosa, Santa Rosa, and Beauty, all of which are large early plums.

Earliness is especially desirable; for, after cherries, plums are about the first fruits on the Eastern market and the varieties that get there while people are fruit hungry sell the best.

Since California fruit is likely to be on the journey two weeks before being consumed, and since plums ripen on the way, it behooves the grower to pick his fruit at just the time when it is largest and sweetest, consistent with the ability of each variety to arrive in firm condition and good color on the market. Large plums command a substantial premium.

A. G. Tucker, for 25 years a fruit grower of Vacaville, gives us descriptions of a few varieties when they are ready to pick for shipping.

All colored fruit elaborates its sugar right after it begins to color. Tragedies begin to color on the sunny side of the tip end before they are full size. Many pick them at this time but should not. For the next four days they swell rapidly in size until they are colored all over. If weather has been warm up to the first color and then is cool, the plums ripen faster than if it remains warm. Pickers need warning to look on both sides of a Tragedy before picking; if colored all over they are of maximum size and sweetness and will carry firmly to the market. If one should be affected by white mildew as was noticed during the delay caused by the railroad strike, the mildew does not affect whole-skinned plums next to it.

Burbanks turn from green to yellow with red spots following and then dark red. They should be picked for the East during the red-spot stage and will then arrive at a distant destination sweet, juicy, and well colored. Some people pick them while still

green. They color alright but are dry and woody. Consumers, of course, judge the rest of the variety by whatever they get first so this green fruit shipping should cease.

Wicksons are a little different, being somewhat pointed. They turn from green to light yellow and red. If allowed to redden, the points will be soft on the market and some may be bruised and broken. Picked when a light yellow color, they travel in good shape to England. Grand Dukes turn blue from the green and should be held on the trees until they are dark blue all over. Otherwise they will be sour and woody. There is greater latitude in the time during which this variety may be picked.

The Gros, which might be dried as a prune, is also good for a several days wait after they might be picked, when there is a rush of work. They turn from green through light yellow to red and should be picked before they are three-fourths red. Stems should be left on though Charles Collins has never heard complaint from buyers on this point. Giant plums are torn open when the stem is pulled off so that they rot quickly.

BURIAL BETTER THAN CREMATION.

To the Editor: Among the trees in our orchard we have an apple tree that until this spring has not made any new wood. It appeared to be barely alive, although the other trees planted at the same time (six or seven years ago) have grown and are bearing, all having the same treatment in cultivation and fertilizing with this exception, namely, that two years ago next June we buried a dead dog at the root of the sick tree. The following year the tree appeared to be recovering, as the leaves remained green and bright until winter, but no new wood was made. This spring it bloomed very freely and quite a number of apples are now on it. New wood several inches in length is forming on every branch. The sick tree appears to have taken a new lease of life. We never burn any dead fowls or animals of any kind, as we find that they are more useful planted in the orchard at the root of any tree that lacks vigor and fails to produce a crop of fruit.

Sixty years ago on the old farm where the writer was born and raised, we had an apple and a damson plum tree that never would bear more than five or six apples or plums. An old gardener advised father to bury some dead pigs, that the old sow had killed, at the root of each of these barren trees. Three were buried under the apple tree and two under the damson, and the following year both trees were loaded to the limit with the finest kind of fruit. Although the writer was only a little over seven years of age, the sight of the old apple tree loaded with fruit made such an impression that ever since he has buried instead of burning all dead animal matter. A barren cherry tree was made to bear heavily by burying in a trench, 3 or 4 feet away from the trunk, a lot of butcher's offal. In every case the trees bore good crops for many years afterward.

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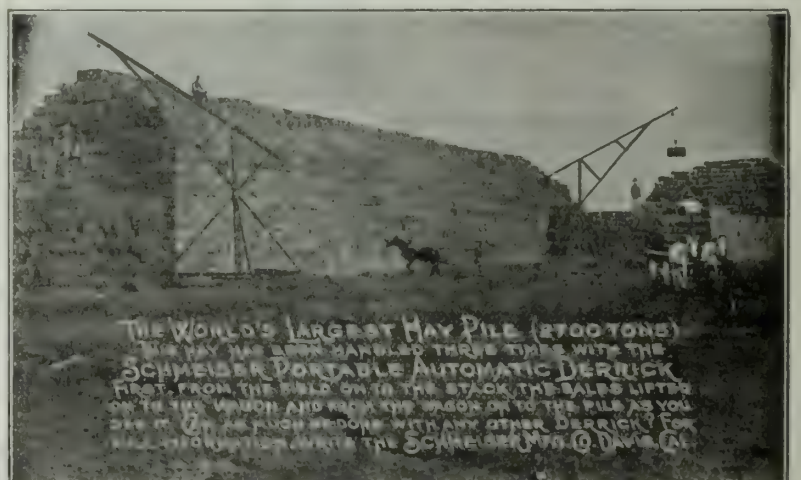
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ROTTED PEACH TREES.

[Written for the PACIFIC RURAL PRESS.]

Wherever peach trees grow in California a large number of the older trees are rotted deeply on the same side of the main branches and the trunk. Often these decrepit trees are grafted over to plums or other fruit in hope that the new growth will "revive" the roots.

How much the reviving influence may be, is hard to guess; it is certain, however, that many of these grafts die even after growing a while and putting out good foliage.

There are two features of this fact that deserve notice. Peach trees sunburn more easily than most other fruits and should be protected even when old but especially when young. Various tree protectors are all right, but black ones should be of large size and should leave considerable air-space between themselves and the south and west sides of the tree. Natural shade is still better; and saving the first growth with this purpose, in addition to the forming of the head, will do much to correct the impression that peach trees are short lived. From the first year to the last of a peach's life, an undergrowth of leaves should be encouraged to shade all of the bark possible. Low heading is a great help. Protection of the trees from troubles which cause the leaves to fall in summer, proper fertilization and cultivation to keep a heavy growth of leaves, a coat of white-wash wherever considerable bark is unshaded, all these will add years to the orchard and tons to the crops.

The other feature is the question of whether it pays to top work rotten trees. This was done in an orchard some forty years old in Placer county last winter, in hopes that the grafts would bear a few crops of plums before the trees would die, and by that time the owner would be in better financial condition to replant. Those trees were cut off two or three feet high. Similar trees not so old but just as decrepit were grafted, near Vacaville last winter eight or ten feet from the ground. Some of these recently looked fair, some were sick, and some were dead with the leaves dried up on considerable new growth.

Grafting over individual trees in a fairly good orchard might be better than trying to grow new ones; but very often a whole block ought to be taken out and the young trees would not then be too much shaded to grow. In only a few more years they would be bearing more than the grafts and would have a long life ahead. They would be vigorous instead of feeble; they would overcome diseases better; they would set fruit more surely in discouraging seasons, and when drouth comes would have more vitality to stand it. It would pay to think long before grafting over a block of rotted peach trees; but it would be better to take measures not to have them on the place.

BARB SEEDLINGS DAMPING OFF.

To the Editor: I wanted to grow rhubarb and as the roots cost so much, decided to plant seed, having raised some in boxes where I lived before. It did so well I decided to try it here. It came up fairly well but rots off under the ground when it has two small leaves. Planted \$15 worth and won't get any by the way it looks. Can you

tell me the reason and if the seed can be treated so it will not happen again?
—E. L., Winton.

[It is "damping off" caused by a fungus. It is generally prevented by watering in larger amount and less frequently so that the surface can be held as dry as possible without famishing the plants. Keeping the surface sanded facilitates drying.—EDITOR.]

RAZING BLACKBERRY VINES

To the Editor: If blackberry vines were cut off close to the ground, as soon as the crop is off this year, would they grow up enough so as to have a fair crop next year? I would expect

to water and cultivate them the rest of the summer.—H. G. S., Folsom.

[On general principles the fruiting season of a plant requires and uses all of its surplus energy and substance; often it weakens the plant cells to such an extent that the whole of the next season is required to recover their normal vitality. Thus we have the alternate years of heavy yields in some plants. After the fruiting season, comes one of rest and recuperation. Plant food for this recuperation is elaborated only in the leaves; if you deprive the plant of all leaves at its period of greatest exhaustion, the reserve in the roots and trunk may be

enough to put forth new leaves which will get busy at once elaborating food. But this is a dangerous practice, and if the reserve was exhausted in fruit bearing, new leaves cannot be started and the plant dies. Most of your blackberries might grow up this fall and perhaps would bear lightly next year, but it would be a severe strain; and what is the use? We take it that perhaps you think the young shoots will be diseased. In that event, spraying or judicious clipping would be more profitable than the loss of the next crop. It is all right to take out the vines that have fruited, at any convenient time; possibly disease and pests will be minimized.—EDITOR.]

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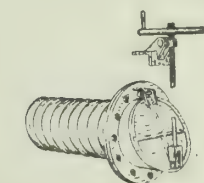
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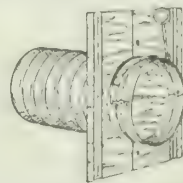
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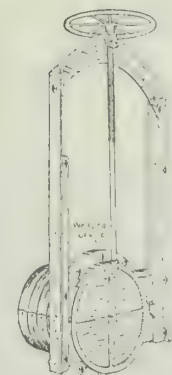
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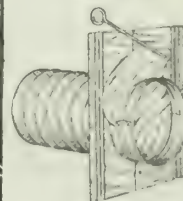
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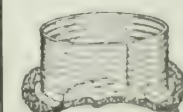
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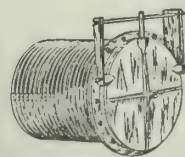
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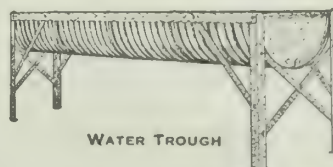
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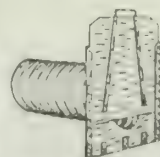
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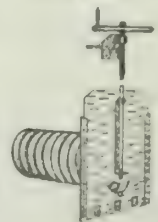
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AGRICULTURAL REVIEW.

Deciduous Fruit News.

The American Nile ranch, of Imperial county, has shipped four carloads of apricots to Eastern points so far this season, at prices from \$2.60 to \$2.75 per crate.

Horticultural Commissioner A. L. Rutherford, of Stanislaus county, reports that most of the fruits in that county will produce a normal crop, but that pear blight will cause some loss in the pear crop.

The warm weather of last week was a big factor in ripening fruit in the Sacramento valley and as a consequence the shipments for the week were considerably larger than before.

A report from Hemet, Riverside county, states that the fruit crop in that section will be unusually large this year and that if the warm weather continues, picking will have to be started in the early part of June. A considerable part of this year's crop will have to be dried on account of the damage done by hail earlier in the season.

The Woodland Cured Fruit Association recently filed articles of incorporation. This is a branch of the California Cured Fruit Exchange.

Reports from Porterville, Tulare county, state that eight carloads of apricots have been contracted for by New York brokers. It is thought that about 150 tons will be handled by the local cannery at that place.

It is estimated that 1250 acres of fruit have been planted in Butte county, during the past season, most of which were prunes, almonds, and peaches.

The first carload of Tragedy and Clyman plums to leave the State this year were shipped May 28, from Redbanks, Tulare county. The buyers pronounced the shipment to be of the finest quality they have ever seen. Redbanks was also the first on the market this year with early peaches and apricots.

The prune crop of Oregon and Washington is said to be lighter than usual this year.

General Agriculture.

Plans are being made by the Calxico Oil Mill company, at Calxico, Imperial county, to have their two new gins completed some time during the middle of July, when it is thought the first of this year's cotton crop will be ready to harvest.

The first carload of barley from Corcoran, Kings county, this year, was shipped last week by J. H. Firebaugh.

Nelson and Sawyer of Waterford, Stanislaus county, have raised some Chul wheat this year which will be used in the decoration of the San Joaquin counties exhibit at the Panama-Pacific Exposition.

The farmers in the Island district, near Fallon, Nevada, have perfected an organization for the protection of their interests and to secure better marketing methods.

The harvesting of grain and hay was somewhat delayed near Ducor, Tulare county, on account of rains last week and it was thought that little or no harvesting would be done before the first of June.

Reports from Oregon state that while the hop crop in that State will be somewhat light, the added acreage will bring the total tonnage up to between 151,000 and 152,000 bales for the year. Extreme prices for spot of-

ferings are said to be 15 cents per pound.

A report from Fresno is to the effect that the crop of Turkish tobacco raised in that vicinity this year, is much smaller than that of last year, on account of the poor prices of last year due, it is said, to the product not being of a good quality.

The 50-acre peanut crop of the Southern Concessions company, located near Corcoran, Kings county, is said to be doing nicely and it is expected that a large crop of fine quality nuts will be harvested.

According to reports from Anaheim, the sugar beet factory at that place will start operations on this year's crop of beets, about July 25. There are 8500 acres planted to beets in that section and the crop promises to be a good one.

Advices from Visalia are to the effect that the crop of sugar beets planted for the sugar beet factory, at that place, will be larger this year than last and that the quality will be good.

Word comes from Butte county that there are 12,500 acres now planted to rice in that county, making a gain of 7000 over last year. Growers state that there would have been a larger acreage planted this season if more irrigation water had been available.

Annual Nurserymen's Meeting.

In a letter to this office from C. A. Tonneson, secretary of the Pacific Coast Association of Nurserymen, he states that elaborate preparations are being made by the British Columbia Nurserymen, for the entertainment of the nurserymen who attend the twelfth annual meeting of that association, June 16 to 18. Those going from other states will buy tickets through to Vancouver, paying full fare one way and taking receipts, certificate plan, via Victoria, leaving Seattle on the Canadian steamer at 9 a. m. June 15. At 2:30 p. m. the Victoria people have provided for their guests, auto rides through their various parks and a banquet at the Empress Hotel in the evening. The delegation will leave on the night boat for Vancouver. On each afternoon during the session auto trips are provided to visit the various parks and Capilano Canyon, also an excursion to Burrard Inlet with a closing banquet at or near the Wigwam Inn. The strong features of the business program will include standardization of inspection of nursery methods, and the problem of increasing the demand for ornamental stock. These will be carefully considered.

With the Grape Men.

The California Associated Raisin company have just issued their first price list on raisins for the new crop. They are as follows: 3 Crown London layers, 20-lb. box, \$1.15; 4 Crown clusters, \$1.40; 5 Crown Dehesa clusters, \$2; 6 Crown Imperial clusters, \$2.50; 5 lb. boxes 50c. additional; 10 lb. boxes 25c. additional; fancy clusters, 1-lb. cartons, 20 to the box, \$1.65; fancy clusters, 2 lb. cartons, 12 to the box, \$2; fancy clusters, 5 lb. cardboard cartons, 4 to the box, \$2.25; Bully layers in 50-lb. cases, \$2.50.

Experienced malaga growers in the vicinity of Selma, Fresno county, are advising growers to top their vines at this time if they wish to get good re-

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FOR SALE CHEAP, if quick sale—One-half interest in a dairy and milk route near town; \$200 monthly income. Inquire "Dairy," care this paper.

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10 ACRES ALFALFA, family orchard; barn, well and tank; small house, new buildings; close to town. Price \$4000. H. L. CRIPE, Patterson, Cal.

9.98 ACRES IN ALFALFA, small orchard, chicken houses, 5-room cottage; 7 tons hay included. \$4300, terms. J. H. DURBIN, Patterson, Cal.

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FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

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FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Farm Development, Hays.....	\$2.00
Manual of Laws.....	2.25
Farm Buildings.....	2.20
Breeding Farm Animals, Marshall.....	1.60
Hog Book, Dawson.....	1.60
The Dairy Farm, Gurlier.....	1.10
Greenhouse Management, Taft.....	1.50
Mushroom Culture, Falconer.....	1.00
The Study of Corn, Shoesmith.....	.50
The Hop, Myrick.....	1.50
Meadows and Pastures, Wing.....	1.50
Trees of California, Jepson.....	2.50
Asparagus Culture, Hexamer.....	.50
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American Cattle Doctor, Dadd.....	1.00
Home Pork Making, Fulton.....	.50
Farm Gas Engines, Brate.....	1.10
The Book of Alfalfa, Coburn.....	2.00
Swine in America, Coburn.....	2.50
Feeds and Feeding, Henry.....	2.25
Date Growing, Popenoe.....	2.00

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PACIFIC RURAL PRESS,
420 Market St., San Francisco.

turns when the crop is shipped in the fall.

Grape growers near Lodi, are being advised by the buyers to sulphur their vines at this time to prevent mildew, as last year's crop contained many mildewed grapes.

Vegetable News.

The shipping of carload lots of cantaloupes was started last week from Brawley, Imperial county, and will continue upon a larger scale for the next six or seven weeks. The crop this year is said to be large and growers and packers are taking every precaution to see that the pack is up to a high standard, in order that good prices may rule.

The Arakelian brothers, of Calexico, Imperial county, received \$110 a ton for the first ton of watermelons that they shipped this year to the Los Angeles markets.

A dispatch from Esparto, Yolo county, states that shippers of green corn, in that section are receiving good prices and that about \$100 worth a day is being shipped at present.

The first carload of loganberries for the season, left Sebastopol last week for the east and it is thought that several more carloads will be shipped this week. The first shipment this year is 16 days earlier than the first one last year. The berries were pre-cooled before leaving and were of fine quality.

Nut News.

A New York firm recently purchased 250 tons of almonds from the Durham Almond Association, of Butte county, on the basis of 17c. for Nonpareils, 16c. for I. X. L., 15c. for Ne Plus Ultra, and 13c. for Drakes. A new warehouse is to be erected by this association in which to blend the nuts and to prepare them for shipment.

The walnut, almond and chestnut crop on the Stanford University's ranch, at Vina, has been sold to C. F. Gray, of Chico.

What is said to be the largest almond shelling plant in the world is to be built at Sacramento, in the near future, by the California Almond Growers Association, according to T. C. Tucker, manager.

Citrus Notes.

That changes must be made in the marketing of our oranges, if we are to receive higher prices, is the opinion of a large eastern buyer who recently visited this State. He suggested the need of a standard pack and fewer brands. He also stated that it is a mistake to ship fruit before it is thoroughly ripe as the early markets are badly damaged by the practice. He thinks that smaller boxes would help too, as he states that many people would buy a smaller box more readily than the present size.

Up to May 22, packers in Lindsay, Tulare county, had shipped 196 carloads of this year's Valencia crop. Prices are said to be good.

The Strathmore Citrus Association has shipped 17 carloads of valencias from that place this year, which about completes this year's operations. The first car sold in Minneapolis, Minn., for \$2.25 a box, f.o.b. Strathmore.

A movement is on to secure the co-operation of schoolchildren in gathering poppy seed to scatter along roads and railways all over California to make the whole State a blaze of glory for the 1915 visitors. March 30 will be Poppy Day at the Exposition. Newspapers and chambers of com-

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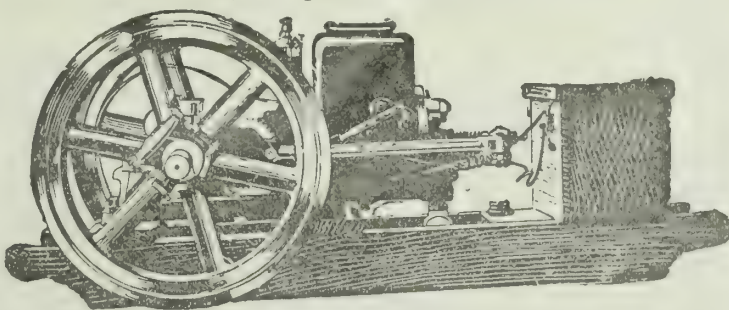


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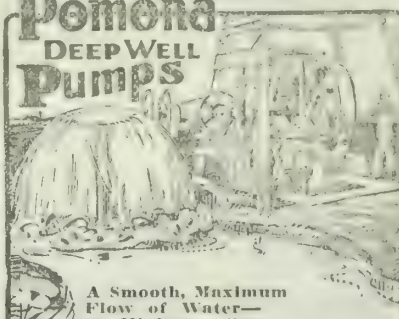
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merce are being asked to push the idea. Joseph T. Brooks, of the San Jose Chamber of Commerce, is the originator.

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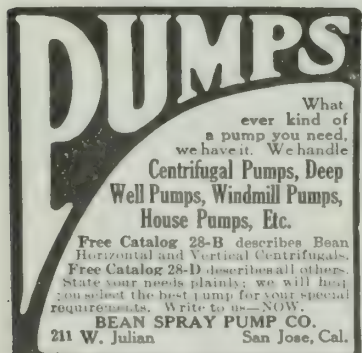
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The Vegetable Garden.

YOU KNOW UDO?

David Fairchild, Agricultural Explorer of the U. S. Department of Agriculture, is well known to Californians because of the many visits he has made to the State and the many interesting things he has brought to us from foreign parts. One of these which has taken commercial hold upon us is the Japanese vegetable udo, which is being grown for Eastern shipment by M. E. Meek, near Antioch, Contra Costa county. Mr. Meek has several acres, and Mr. Fairchild says it is the first commercial field of it in the United States.

About twenty years ago attention was first directed to a proposal to grow the udo of Japan in America as a vegetable. David Fairchild, agricultural explorer of the department of agriculture, in 1902, published a short account of the udo, which he wrote in Japan while traveling as Mr. Barbour Lathrop's explorer. Since 1906 Mr. Fairchild has had growing on his own place in Maryland just such a patch of udo as he is now encouraging others to plant. Each spring he has had the pleasure of experimenting with it in his kitchen, as well as blanching it in the garden. As a commercial proposition he had had the chance of watching an experiment in California made by Mr. Meek, who has now for three years been growing several acres of udo and has shipped crates of it to the Eastern market, where, as was to be expected, he has found commission merchants slow to take it up.

Mr. Fairchild believes that udo is worthy of adding to our list of spring vegetables, for it is easily grown, its shoots are readily blanched and it requires little care. A patch of it can be forced every spring for at least six years and probably much longer. When properly prepared its blanched shoots are delicious; they have their own characteristic flavor, can be prepared for the table in a great variety of ways and are keenly appreciated by people of discriminating tastes. Space for space, udo will yield about the same amount of food for the table as asparagus and will be ready for the table at about the same time in the spring.

From the fact that udo is grown all over Japan, one might assume that it is adapted to a wide range of climate, but it must be borne in mind that Japan has an insular climate, and that none of its plants are subjected to drouth. The udo has done best in the moist regions of this country, especially well in the New England States, Canada, and the Atlantic States as far south as the Carolinas, in the rainy belt of Puget sound, and in the river-trucking sections of California. The fact that it dies down in the winter and can be covered makes it possible to grow it where temperatures go far below zero.

Mr. Fairchild, who is the author of bulletin 84 of the department of agriculture on "Experiments with Udo, the New Japanese Vegetable," states that he is not certain that from a purely economic standpoint udo will prove superior in any detail to vegetables which are already under cultivation in America. Notwithstanding its centuries of culture in the Orient, it is still a vegetable whose value remains undiscovered. Mr. Fairchild is of the opinion that it is highly de-

sirable that amateurs should experiment with it and the public get acquainted with it in order that a sufficient demand may be created to encourage growers to investigate it on a sufficiently extensive scale to determine whether it has any really economic advantages over such annual crops as celery or such perennial crops as asparagus, to both of which it is similar. It has been estimated that when grown on a large scale it would require much less labor than celery and that it furnishes a crop from seed at least a year sooner than asparagus, and there may be other advantages which will appear during the long process of adaptation.

Udo has already won many adherents among those who care for new vegetables, and although it cannot by any means be called a well known table vegetable, it has arrived at a point where it can be pushed by any careful, enterprising advertiser of fancy vegetables. It has been served successfully at large dinner parties in Washington and on the private tables of those who have their own gardens.

When properly prepared udo is one of the most delicious of vegetables, but unless properly cooked is sure to meet with ridicule. The reason for this lies in the fact that its stems contain a resinous substance which gives them a decided flavor of pine when tasted raw. It is a simple culinary practice to boil strong flavored vegetables in two or three waters, and this is advisable in using udo. An hour's stay in ice water will remove the resin from the shoots, provided they are cut into thin slices or shavings. The bulletin contains recipes for cooking udo—"Udo on toast," "Udo salad," and "Udo soup."

WIND-BREAK ON IRRIGATION DITCH.

To the Editor: Running along the west side of my 50-acre ranch is one of the main irrigation ditches of the South San Joaquin Irrigation District. This ditch measures 11 ft. 6 in. on the bottom and the water is to run 3 ft. deep for about 20 days in each month during the irrigating season. As the prevailing wind is from the north-west and west during the spring and early summer, I wish to plant a wind-break along the outside of the ditch bank. The soil is classified by U. S. Survey as "Fresno fine sand." Can you tell me of some deciduous tree or trees that would make a good erect windbreak under such conditions? How far apart should they be planted? How would perennial rye grass thrive on these ditch banks?—D. M. B., Manteca.

[If you want it very upright nothing beats the Lombardy poplar and by planting close say 20 feet you can get an effective windshield. It does well in your valley. Rye grass will hold on so far as the moisture reaches it, but it will summer-kill if the bank stands dry long.—EDITOR.]

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900-910 Santa Fe Ave.,
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Constructive Agriculture—No. 22.

PREPARING FOR CREAM GRADING.

[Written for the PACIFIC RURAL PRESS.]

Clean butter fat makes better butter; and better butter now seems a necessity if dairymen are to get prices which will be satisfactory to the maintenance of their herds, in California.

In the production of better butter fat the cleanliness of the work done in the milk houses, in caring for the milk and utensils is of prime importance and while we have laws which, if enforced, would greatly aid in the production of a better grade of butter, the State Dairy Bureau have found it impossible to be as severe as the law allows on account of the prejudice against their work. While they have accomplished much good, it is necessary for the dairymen themselves to make the improvements, of their own accord.

In its work of inspecting dairies, the State Dairy Bureau finds that one of the great troubles with the average dairyman is in his manner of washing his utensils, as well as getting along with utensils that are hard to keep in a sanitary manner.

Their recommendations are that dairymen should be more careful in washing their utensils, for the simple reason that if not washed in the right way, the work is almost wasted. For instance, it has been found that with separators a great many wash only once a day, pouring warm or hot water through the separator at night to rinse out the cream and, to their mind, clean the disks in the separator. This is a poor practice, because most of the bacteria deposited in the separator during the evening separation, are left in; and warm water poured through only favors the bacterial life. By morning the fresh milk poured through gathers these germs; and is the best medium they could choose for multiplication.

The only way to overcome this is to wash the separator after each milking; and in doing this care should be exercised that the casein is not scalded onto the tin ware, as is often the case. It is best to wash in cold or lukewarm water first; in this way taking off the worst part of the residue, followed later by a wash in hot water, to which has been added a small amount of washing powder. This latter should not contain any grease, as that would be apt to adhere to the tinware also. After washing in this way, it is considered advisable, and is so specified in the law, that the utensils be thoroughly submerged in boiling hot water, or into a vat where they may be steamed. The latter practice is usually to be recommended and may be accomplished either by having a small steam boiler in the dairy room, or if that is too expensive, a galvanized iron tank may be made, having a comparatively large bottom and some kind of a cover made of the same material. This vat may be set over a fire outside the building; and by putting in a small amount of water the work of thoroughly steaming or sterilizing the utensils is easily and quickly done.

If the work is not done in such a way, casein, which is transparent in water and not easily detected when the tin is wet, sticks to the tinware and in a short time the utensils become dirty looking and yellow. Casein also becomes so hard that it is impossible to wash it or scrape it off.

After the utensils have been thoroughly cleansed, it is advisable to provide some sort of a screened enclosure, where they may be in the open and at the same time protected from flies. Such enclosures may be made by enclosing with a screen, a shelf from a window, in the milk room, or making a screened enclosure entirely separate from the other buildings.

CREAM COOLERS NECESSARY.—In the production of good cream there is perhaps no factor which is of more importance, outside of the cleaning of utensils, than the cooling of cream. This may be accomplished at little or no expense, by having a water cooler, over which the cream is run as it comes from the separator. This will cool the cream within a few degrees of the water temperature; and where such water is pumped directly from a well the temperature is good enough for all practical purposes. From this, the cream may be taken into a separate room through which air circulates, and by covering the can with a burlap sack or jacket and keeping the burlap damp or wet it is surprising how long cream will keep sweet.

If the practice of grading cream becomes a law or a regulation with all creameries, as it now seems most likely to do, the small things around the dairy in the way of sanitation and better cream will largely influence the success or failure of the undertaking. The effects of poor butter fat have been seriously felt during the past year not only in California, but in the East as well, and investigators seem to think that we may expect no improvement in prices until the quality of our butter is improved.

SILAGE FOR HORSES.

[Written for the PACIFIC RURAL PRESS
W. D. GUTHRIE.]

A great many persons believe that silage is poisonous to horses. This idea, no doubt, came about by several horses dying while being fed silage.

It is now believed by a great many of our best horsemen, that those horses were receiving either mouldy silage or else too many pounds per day.

A horse is different from a cow, when it comes to eating silage. A cow will eat 30 to 50 pounds a day and thrive, while a horse does best when receiving only 10 or 12 pounds daily. This amount is just enough to supply the succulent feed they crave. It also gives variety to the ration.

Of course if they get some green feed every day, then it is useless to feed silage, but if not, you will find like Mr. Wood, a member of a large importing company, that the horses keep in better flesh and on less grain where 10 or 12 pounds of silage is fed regularly.

The main points to observe in feeding silage to horses are: first, be sure that it is sweet, with no little lumps of mould in it; second, start in with a very small amount and gradually increase; third, be sure that no silage remains to mould in the feed boxes.

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Veterinary Questions.

[Answered by Dr. E. J. CREELY, San Francisco Veterinary College.]

INFECTED UDDER.

To the Editor: I have a very fine cow that freshened last February. Two days after freshening she had milk fever. I called a veterinarian, who cured her. She eats well, looks well, and seems in every way to be perfectly well. Has been on green burr clover pasture. The cream, after souring, will rope off of a spoon like thick syrup. The same veterinarian said the feed was the cause and to change, which we have done; but the cream is the same. Can you tell me the cause and if there is a cure? Also if it is dangerous to use milk and butter from this cow?—R. A. W., Campbell.

This is an infection of the udder, probably due to a non-sterilized milk tube. Have the veterinarian treat the cow for infectious mastitis.

NEW BULL NEEDED.

To the Editor: I have two cows that I can't get with calf. One has her first calf and the other her second. My bull is two years old, and I think all right. He has served one three times and the other four times. They come in regular every 21 days. Can you give me a remedy for this case?—R. B. O., Reedley.

My advice would be to change your bulls.

OBSTRUCTION IN MILK DUCT.

To the Editor: We have a cow that through some kind of infection lost one quarter of her udder about a year ago. She calved about two weeks ago and since that time we have had a veterinarian in our section examine her. He made an opening in the teat with a knife and inserted a tube. By inserting this tube we are able to draw milk from the teat, but find that we are unable to milk her by hand when the tube is out. Perhaps it would be clearer if I say that with the tube inserted the milk flows of its own accord. The veterinarian now tells us that he will have to perform an operation to overcome this objection, and as she is an extra good pro-

ducer and we know little or nothing of his ability, we would like your opinion as to what is best to do.—Subscriber, San Francisco.

I presume there is an obstruction in the milk duct of the teat, and the veterinarian probably intends to remove this obstruction with his bisturi. The veterinarian seems to understand.

PIGS MAY HAVE COLD.

To the Editor: I have a sow with nine pigs. The pigs are two weeks old and one of them has been sick for two days. It coughs a great deal and has a heavy throbbing just in front of the hind legs in the flanks, and one of the others is starting to do the same. The sow is in good condition, but not over fat. I feed her one-half gallon barley twice a day, with plenty of separated milk. They have never been in any bad weather. Can you tell me the cause and also the treatment for same?—W. C. G., Gridley.

These symptoms are too vague and I find it impossible to make a diagnosis. It looks like a simple cold. I would separate it from the healthy pigs and thoroughly cleanse and disinfect the surroundings.

FOREIGN BODY IN EYE.

To the Editor: I have a horse which is bothered by a discharge of yellow mucus from the eye. On examination I found some small hairs in the corner of the affected eye and these were surrounded by grainy and hardened mucus. The matteration seems to be caused by these hairs. Washing the eye does not help the trouble. Can you give me a remedy?—K. S. H., Seeley.

A careful examination, after numbing the eye with a 4% solution of cocaine, will reveal a foreign body in the eye, or the lachrymal conduit (a tube which carries the tears from the eye to the nose). If you raise the nostril and look inside the nose you will find the lower opening of this conduit. I would recommend you to bathe the eye several times daily with cold boracic acid water, a teaspoonful of boracic to one quart of water.

SWELLED ANKLE.

To the Editor: I have an eight-year-old horse that about a year ago got lame in his hind leg by a swelling, just above and back of the ankle joint. It looks very much like wind galls and feels soft. It gets quite

large at times if I work him hard.—J. W. P., Plano.

This is bursitis and tendonitis, one of the meanest kinds of lameness to treat. Put on a high heel shoe, no toe; shorten the toe of hoof and apply a cantharides blister: Simple cerate, 3 ounces; cantharides, ½ ounce. Cut the hair and apply thoroughly.

After 4 days wash off the blister and grease once daily. It would be better to have a veterinarian cauterize with a hot iron. The horse should be put on pasture two or three months.

SWINE BREEDERS MEET.

The annual meeting of the California Swine Breeders' Association

IDEAL GREEN FEED SILOS

A few of the many prominent users who have recently purchased Ideal Green Feed Silos:

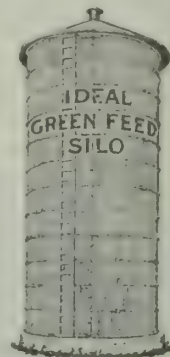
U. S. Dept. of Ag., Glenwood, Hawaii
University of California, Davis, Cal.
Ambrosia Cream Co., Napa, Cal.
G. W. Dimmick, Santa Rosa, Cal.
W. B. Atterbury, Crows Ldg., Cal.
Bedell L. & S. Co., Dos Palos, Cal.
Newman Bros., Elk Grove, Cal.
E. F. Sangulnetti, Yuma, Ariz.
Arnold W. Dado, Petaluma, Cal.

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O. H. Roberts, Turlock, Cal.
E. F. Young, Modesto, Cal.

The intending purchaser of a silo will make no mistake in following the example of the above list.

Plant corn now and have it ready to fill your silo this fall, insuring yourself against the high price of feed this winter.

Write for silo folder B for full information.

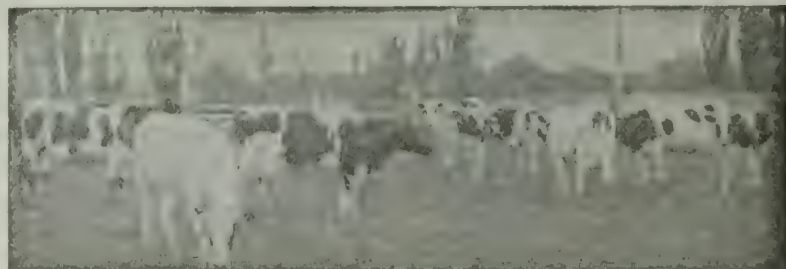


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COWS with Official Records—COWS now on Year's Semi-Official Test—HEIFERS BRED to a Son of the BEST DAUGHTER of KING SEGIS, the world-renowned sire—HEIFERS not bred—HEIFER CALVES and BULLS, ALL AGES. Holsteins with two good sides to their pedigrees.

A Rare Opportunity for BEGINNERS and BREEDERS to secure some of the BEST SEED the breed affords. There are Grandsons and Granddaughters of POINCIAN, KODIAK, KING SEGIS, HENGERVELD, DE KOL—GORDON, GLEN, CENTAR, CALAMITY, JANE'S PAUL—CONTEST, COLANTHA CHAMPION—JOHANNA CLOTHILDE LAD—PONTIAC HENGERVELD, PARTHENON, KING SEGIS, WALKER, MOORE, TAYNE, DE KOL—DE KOL, DE KOL, DE KOL, and many other celebrated sires famous in Holstein History. The BLOOD THAT WILL ENRICH YOUR HERD.

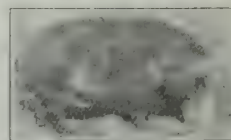
PLAN NOW TO ATTEND THIS GREAT EVENT where Holstein quality combining TYPE, GREAT PRODUCTION and PREPOTENT BLOOD will be sold without reserve.

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Have 85 suckling pigs to pick from now. Ten more sows to farrow soon. Will have 20 bred gilts, also service boars for sale after showing at State Fair in September. Hogs are scarce. Order now for fall delivery.



MODESTO KING
1st prize aged boar at
1913 State Fair

DUROC-JERSEY FARM,
JNO. J. DAGGS, Prop., Modesto.

was held at Davis, June 2, about 40 members being present.

The two main features of the program had to do with the betterment of conditions at the State Fair, at Sacramento, especially pertaining to the housing of hogs and better loading and unloading facilities. Along this line the meeting was addressed by a representative of the State Agricultural Society, urging the association to pass a resolution favoring the coming State Fair bond election.

The following officers were elected for the coming year: President, A. M. Henry of Farmington; vice-president, J. K. Fraser of Denair; secretary-treasurer, J. I. Thompson of Davis; directors, C. N. Odell of Modesto, G. A. Murphy of Perkins, C. B. Cunningham of Mills, and H. G. Armstrong of Woodland.

PURE-BRED SALES.

Following are the sales made of registered live stock by California breeders since our last issue containing this department. Breeders are urged to send in their recent sales that we may make the department of more value.

HOLSTEIN CATTLE.

R. F. Guerin, Visalia, sold to R. C. Sturgeon, Tulare, bull Count Manzanillo Hengerveld; to T. Settemire, Porterville, bull King Wilmont Hengerveld; to D. S. Hefflefinger, Tulare, bull Fayette Sir Walter; to J. G. Gingericili, Porterville, bull Valador of Sunnyside; to R. L. Emery, Bakersfield, bull Hathaway Hengerveld; to George L. Willer, Bakersfield, bull Amado of Sunnyside; to George Beck, Tulare, bull Dan Cupid of Sunnyside; to R. C. Sturgeon, Tulare, cow Edna Drosky.

K. W. Abbott, Milpitas, sold to D. A. Madeira, Salinas, bulls Moorland Valnetia Korndyke and Moorland Mercedes Korndyke; to T. Brandon, Milpitas, bull Moorland Jetze De Kol; to St. Joseph's Agricultural Institution, Rutherford, bull Moorland Creamelle Chief; to George Murray, Ripon, cows Moorland Lida Lyons and Moorland Mattie of Milpitas.

JERSEY CATTLE.

T. B. Purvine, Petaluma, sold to C. A. Bean, Guerneville, the bull Legacy's King Raleigh 117676. This bull is out of Legacy of Byrondale with a record of 40 pounds of 6 per cent milk.

DUROC JERSEY SWINE.

John Daggs, Modesto, sold to E. H. Dutton, Monterey, two service boars; to American Beet Sugar Company, Chino, one service boar; to J. S. Simon, Cotton Wood, one service boar; to J. W. Manning, Kaluhi Mani, Hawaii, five sows and seven boar pigs; to Robert Lapsley, Modesto, one bred sow; to Ray Lapsley, Modesto, one bred sow; to Elmer Mennan, Turlock, one boar; to C. W. Wood, Los Banos, five sows and seven boar pigs; to L. C. Elfers, Selma, two sow pigs; to James Real Estate Co., Yuma, Arizona, 20 sows and three boar pigs.

TO BOOST THE HOLSTEINS.

Our attention has been called to the fact that a great many of the Holstein breeders are not responding to the appeal of the California Holstein Breeders' Association, inviting them to become members. Perhaps some may feel that the yearly dues of \$5, which is being charged this year, is excessive, and they might well consider it such were this an ordinary year, but in view of the fact that no

provision has been made for "black and white" view herds at the exposition next year, and that the chief reason for the increased fee is to make such a representative showing possible, we believe it is very reasonable.

As we have repeatedly pointed out in these columns before, what California breeders most need at this time is larger and stronger associations, and every breeder should receive a sufficient amount of benefit from an active Holstein association, during the next year to more than recompense him for his relatively small yearly due.

Live Stock Directory

Rate in this directory, 3c per word each issue; or, if carried weekly for one year, 2½c per word.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

AYRSHIRE—THE PERFECT COW—Steybrae Ayrshires. Have for sale fine young bulls from imported dams and sires. Large for their age. Fine color. For particulars, address E. B. McFarland, San Mateo.

REGISTERED AND GRADE HOLSTEIN BULLS, from one to eighteen months old. Herd headed by Hartog Pontiac 48823-Rowena Maid Mutual 46304. Address Superintendent Whittier State School, Whittier, Cal.

HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warrier herd bulls, both sired by \$17,000 bulls. Young stock for sale. Also Reg. Duroc-Jersey swine. W. Fisk, Davis, Cal.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

THE McCLOUD RIVER LUMBER CO., McCloud, Cal.—High-class thoroughbred Holstein bulls for sale. Write for prices and pedigrees.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars. J. W. Benoit, Route 2, Modesto, Cal.

CREAM CUP HERD—Registered Holsteins. Pontiac bull calves. M. Holdridge, Modesto, Cal.

REGISTERED AND GRADE HOLSTEINS. K. W. Abbott, Moorland Farm, Milpitas, Cal.

ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

TWO HOLSTEIN BULL CALVES—Prices very reasonable. Cooley Bros., Durham, Cal.

REG. HOLSTEINS—Bull calves, Juliana-King of Riverside breeding. B. F. Anderson, R. 2, Modesto.

REGISTERED HOLSTEINS—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

COPA DE ORO FARM. Pure-bred Holstein cattle. Los Banos, Cal.

J. S. GIBSON CO., Williams, Cal.—Registered Holstein bulls for sale.

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All Designed by Our Expert Engineers. Made in Our Own Immense Factory from Clear, Air-Dried Redwood, Selected from Air-Dried Stock of 40 Million Feet, which We Carry at Our Plant at ALL Times.

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REG. POLAND-CHINA PIGS for sale from our prize-winning stock—the prolific kind. Both LARGE AND MEDIUM TYPE. Either sex. Price \$12.50 up. Guaranteed as represented or money refunded. W. A. Young, Lodi, Cal.

REGISTERED DUROC-JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. F. Daggs, Modesto, Cal.

THOROUGHbred JERSEY-DUROC HOGS—Most prolific, hardest and safest hogs to breed. D. R. Price, Ellsworth, Cal.

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DUROCS from first-prize winners State Fair, \$15.00 up. Ed E. Johnson, Turlock, Cal.

REGISTERED O. I. C. SWINE—All from premium stock. C. D. Conway, Lakeport, Cal.

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POLAND-CHINAS: large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Manager.

KNOB HILL STOCK FARM—Registered Poland-China swine. A. M. Henry, Farmington.

DUROC-JERSEY BOARS—Weanlings. Lindquist Bros., Turlock, Cal.

CHAS. GOODMAN, Breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

HEREFORDS—Gay Lad 6th head herd. O. Harris & Sons, Harris, Mo.

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FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

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MISCELLANEOUS.

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S. B. WRIGHT, Santa Rosa.—Registered Berkshire hogs and Jersey cattle.

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1501-3-5 So. Main St., Los Angeles.

The Pig's First Week.

[Written for the PACIFIC RURAL PRESS
by J. C. LOOMIS.]

The loss of pigs before weaning time is one of the big wastes on most farms where hogs are grown in any considerable numbers, and the breeder whose pigs live through the weaning season successfully, is usually assured of a high percentage.

With registered stock the loss is even more pronounced; for when pigs are worth \$25 to \$50, at three or four months old, each loss before weaning prevents profit later on.

In recent visits to two large pure-bred breeders' farms, our attention was called to the manner in which the young animals were cared for during the first week of their lives and it struck us that if all farmers took an equal amount of care at this stage in the game, their losses with hogs would be very materially decreased.

At the first ranch we found three sows with litters of eight or more pigs each that had been farrowed the night previous. The owner stated that he had spent most of the previous night in the big pens, taking the pigs from the sow as soon as they were born and placing them in small boxes in another pen, where they were kept until the entire litter had been born. Soon afterward he placed the pigs back in their mother's pen until they had taken their first meal, but no longer; for he explained that if left longer, the sow would become uneasy and in rolling around very likely crush the life out of the little fellows. Putting the pigs back with their mother every three hours is continued for the first two or three days, or until such time as they are able to take care of themselves and properly keep out of their mother's way when she for any reason becomes excited.

At first the sow may resent the taking of her young ones, but by being a little diplomatic, she soon sees that they are not to be harmed and gives up any fighting spirit she may have felt. From the three litters on this place, so far there had been no losses and none were expected, except the runts, which would be voluntarily killed by the owner.

On the second ranch we found that practically the same methods were pursued, only on a much larger scale, as there were many pens full of sows with young litters, and all of them good sized too.

A point discovered by this breeder and one that should be of value to all swine raisers is that many sows which lose large percentages of their litters do not do so because they are naturally poor mothers, but because they cannot endure the sharp teeth of the pigs in suckling. His attention was first attracted to this while watching a heavy sow kill 9 out of 11 pigs, one after another, by rolling on them. Every once in a while a pig would give an extra hard quick tug which caused the sow either to flinch or lie in a new position on top of a pig. Having decided that they were biting the sow, he cut the teeth of the other two pigs off at the gums with a pair of tweezers. That ended the rolling and tossing on the part of the sow and since then every pig has his teeth nipped shortly after being born. Now the losses from that source are extremely small.

Like all other business it is the

little things that count in growing hogs; and the best way to stop the leaks is first to ascertain the cause.

MILK COOLERS ESSENTIAL.

[Written for the PACIFIC RURAL PRESS.]

"Produce good cream and we will pay you extra for it," is the warning which is being given out by many creameries all over the State, to dairymen and one which dairymen will pay more attention to from now on, due to the premiums being offered for such products.

Although the work of milking and the shape and location of the buildings may have a good deal to do with the quality of the milk, it is also necessary that the proper utensils be brought into use and noticeable among those that are very often lost sight of is the milk cooler. These are made in different shapes and sizes, some being cone shaped, while others are made of coils of pipes. In either case water is run on the inside, the milk or cream spreading out in a thin sheet over the outside surface and in this way is cooled to the same, or practically the same, temperature as the water.

Where the product is being sold as butter fat the cooler should be so arranged that the cream runs directly from the separator over the cooler and then into the can. This takes the animal heat out of the cream at once and greatly aids in keeping it sweet. It is not advisable to run the whole milk over the cooler, in such cases, as in order to get the most efficiency from the separator the milk should be at, or near, the same temperature as when taken from the cow.

Freshly pumped well water is preferable to water that has stood for a long time in a tank as it is much cooler and therefore cools to a lower temperature. After using, care should be taken to see that the cooler is perfectly cleaned, the same as separator parts and other utensils.

The manager of a dairy, which has the record of having produced the purest market milk in the State, is authority for the statement that good cool well water run through a milk cooler will bring down the temperature to a satisfactory stage for all practical purposes, and will add greatly to the keeping powers of the cream.

As the cost of coolers is remarkably low, value considered, and as they may be used at little, if any, expense it would seem good business for all dairymen, especially those in warmer climates, to put one in use the coming summer.

MORE LAND FOR DRY FARMERS.

The Los Angeles government land office announces receipt of an order from the General Land Office in Washington providing for the acquisition of what is known as the enlarged homestead, whereby any claimant of land having no water supply may obtain 320 acres instead of the 160 acres ordinarily allotted to homesteaders.

The order has been in effect in other states for a number of years. Territory comprising approximately 50,000 acres in Los Angeles, Imperial, San Diego and Riverside counties is specified for the application of enlarged homesteads.

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop., DAVIS, CAL.

Breeder of

**Short-Horn Cattle,
Shropshire and
Merino Sheep**



"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

Offers for Season of 1914 an exceptionally fine lot of Pure-bred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

O. I. C. SWINE

OHIO IMPROVED CHESTER WHITE

Weaned pigs both sexes ready for shipment after May 1, from big aged sows and by boars of extra heavy bone.

All Stock Cholera Immunized

Certificate of registration furnished with every individual.

Place your orders now.

C. B. CUNNINGHAM, Mills, Sacramento Co., Cal.

50 COWS AVERAGE 717 POUNDS BUTTER.

This is the average of the 50 cows that have completed yearly semi-official tests to date, in our herd, and only 15 at mature age.

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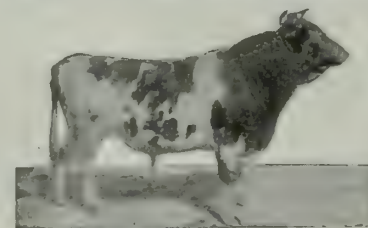


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Don Adonis of Linda Vista.

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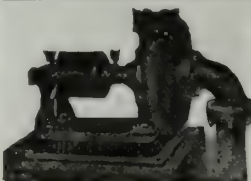
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Our retail prices are less than our competitors' wholesale prices. We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal. Mention Rural Press.

With the Live Stock Men.

The Woodland Cow Testing Association was organized last week with a total membership of over 600 head of cows, and it is thought that this will be increased to about 1,000 in a short time. H. D. Cameron has been employed as tester and started his duties the early part of this week.

Messrs. Eldridge and Andrus, of Monolith, have recently started a herd of registered Jersey cattle, their foundation having been made with 13 head of what are said to be very fine individuals. They expect to eventually have 300 head in the herd, according to a report of one of our field men.

Feed in the California national forests is said to be better this year than for many years past, and as a result sheep men in the neighborhood of Willows, Glenn county, are moving their bands from the plains to the mountains.

C. W. Bowers, of the firm of Ruby & Bowers, of Davis, has just returned from a long stay in Arizona, Texas, and New Mexico. He reports that he has done a good business in the sale of heavy horses during the past season in those States.

P. A. Kerrigan, of Encinal, Sutter county, recently purchased an imported Shropshire buck from the Bishop Bros. flock at San Ramon, Contra Costa county.

Charles Welch, proprietor of the Copo de Oro herd of Holsteins at Los Banos, recently sold four registered bulls to P. F. Roche, of Tulare.

A carload of beef cattle was recently shipped from Santa Rosa to the H. M. Forsyth ranch near Dixon, Solano county, where they will be fattened on alfalfa. Mr. Forsyth has a large quantity of spineless cactus, and it is his intention to use some of that feed in cattle fattening next year.

According to the report of Bernard Crowley, secretary of the Ferndale Cow Testing Association, the average production for 2100 cows in that association for the past year has been 258 lbs. of butter-fat. Of this number, there were six head that produced between 500 and 550 lbs. of fat.

A report is current that the banks in San Francisco and Sacramento are now willing to loan farmers and stockmen money for the purchasing of beef cattle and sheep. This will be good news to the farmers who have immense amounts of feed but no stock and no ready money to buy stock with.

The U. S. Department of Agriculture has just sent out a warning against an alleged cure for hog cholera that has recently been praised very highly by articles appearing in local newspapers. This supposedly new cure goes under the name of Benetol, and the Department requests that all hog owners communicate with the Government authorities before accepting as true any statement that the Government recommends any other than the cholera serum which has long been in use.

Despite the fact that prices for all farm animals are considerably higher in California this year than last, on account of the large amount of feed,

average prices paid for sheep and hogs in the United States on April 15 were somewhat lower than at the same time last year. Beef, however, showed an increase in price of over 3 per cent.

Reports from Chico state that 2000 head of lambs were shipped from that place last week to Chicago by George Waugh, of the Parrott ranch.

According to advices from Tulare county, the auction sale of dairy cows held on the H. B. Lingle ranch brought out many high bids, one cow having sold for \$102.50 and several for \$90.

George Beckman, of Lodi, states that he has found the demand for well bred Poland-China swine exceptionally good this year, and has had no trouble in disposing of his surplus stock.

The George A. Smith sale of registered Holsteins which takes place at Corcoran, Kings county, June 16, will afford prospective breeders one of the best opportunities of purchasing foundation stock that they have been treated too for some time in this State. Mr. Smith has, we learn, gone to a great deal of trouble to assemble good individuals for this sale, many of them having been bred by California breeders and therefore acclimated. The success of other sales of purebred cattle this year seems to indicate that buyers from all parts of the State will be present.

Work on the new creamery at Madera has been started, and it is thought that it will be ready for operation by July 1. Some of the stockholders have been shipping in cows, in order that a sufficient amount of cream may be ready for the new plant to start with.

E. C. Rand, the Berkshire breeder of Santa Rosa, reports that he has found this year's demand for hogs better than ever, and as a result is kept sold out a good deal of the time.

Plans for the construction of a condensed-milk factory are being discussed by farmers and the Commercial Club of Reno. It is stated that with the amount of condensed milk used in Nevada the marketing of the product would be comparatively easy, and it is believed that the present plans will result in the erection of a factory at an early date.

With the addition of the Joseph Enz dairy, the Wildwood Dairy of Santa Rosa is said to now have the largest city milk business that has ever been operated in that city.

C. H. Duborg, of Beowawe, Nevada, has recently purchased the 1500 head of sheep formerly owned by John Forgnone, of Paradise Valley, Nevada.

According to a report of the U. S. Department of Agriculture, the average price of butter for the past year has been 3.2c less per pound than for the year previous, while eggs have averaged about 7c higher.

There was an improved demand for beef supplies at the Portland Union Stock Yards last week, the steer market being particularly firm. Best light hay-fed steers sold for \$7.50 to \$7.75, and grain-fed stuff sold from \$8 to \$8.25, featuring the session. All butcher classes ruled firm. The hog

market opened firm, but eased off somewhat by the middle of the week, best light swine selling at the close for \$8.10. Sheep house business was variable for the week, steady at times and again slow. Prices ruling the Friday morning market were: Lambs, \$6.25; Valley yearlings, \$5; and ewes, \$4.25 to \$4.50.

Victor Eckhoff, manager of the Linwood Farm herd of Holstein cattle, at Santa Cruz, writes that they are finding the demand for registered bulls good in that vicinity and that they are increasing the size of their herd with the young females as fast as they come fresh.

A plan is being put on foot by the counties in the Sacramento valley who are to be represented at the Panama-Pacific Exposition in 1915, of collecting a quart of milk from every cow in the valley and making it into a huge cheese. To an outsider it would appear that a roll of butter would be more representative of the valley than cheese, which is, we believe, a small item in the valley's resources. However, cheese beats nothing at all, though we still believe they should have a representative showing of all kinds of live stock if they want settlers.

The Western Refrigerating Co.'s new cheese factory, at Petaluma, has started shipping cheese to San Francisco where they are finding a ready market for the product.

Miss A. M. Alexander, who owns 400 acres of marsh land near Suisun, Solano county, recently received from the East 10 head of registered Short-horn heifers and a registered bull, also four head of registered Berkshire hogs. L. L. Shoemaker accompanied the stock and will act as superintendent of the ranch.

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BE SURE YOU GET
LARROWE'S
—The kind that is light in color; never blackened or burned.

Just like roots—it makes more milk.
Horses, Poultry, Pigs, also thrive on it.

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CO-OPERATIVE CACTUS FARM,
Kenwood, Sonoma Co., Cal.

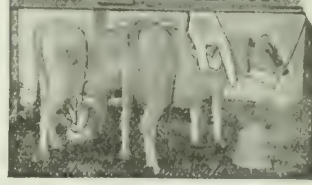
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As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
The Lawrence-Williams Co., Cleveland, O.

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In 1909, its first year, sold	200
In 1910, its second year, sold	300
In 1911, its third year, sold	605
In 1912, its fourth year, sold	900
In 1913, its fifth year, sold	2400
IN MARCH 1914, SOLD OVER 1000	

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Baggage carried on all trains.
Trains arrive and depart from Key Route Ferry.

SAN FRANCISCO, OAKLAND, ANTIOCH & EASTERN RY.

Utility Poultry Versus Fancy.

[Written for the Pacific Rural Press
by SUSAN SWAYSGOOD.]

Only this morning a man said to me, "I am in the chicken business strictly for what money I can make out of it, so I want nothing but utility stock."

"All right," I said, "so far I guess we are about all on the same plane, very few people keep chickens just for fun, except those few who are favored by the gods with all the material wealth they can use. So it is agreed that we keep poultry for the money we can make out of them just as any other business man keeps store for a living. Utility, means, if I understand rightly, to be useful, serviceable."

Now then what does "fancy" as generally understood mean? Simply that a hen is bred up to a certain standard set by men that have made the study of poultry a business. It means that a hen must be well bred, because there is no standard at all for scrub stock. Now in breeding up to what the standard requires for any and all breeds of poultry you have to attain greater utility. It is simply impossible to breed just for feathers as many people suppose. The feathers come as effects, not purpose. A Jersey or a full blood Durham has a finer coat of hair than the scrub cow, yet who doubts that the full blood is a utility cow.

True, feathers don't make the hen, any more than a coat makes a man, but the fact remains that all the egg contests that are being conducted are being carried on with pure-bred stock and the common mongrel is out in the cold neglected.

THE TREND OF THE TIMES.—Progress is in the air, we are no longer content with the scrub cow, the mongrel cur, or the barnyard mixed-breed hen, we want harmony. The orchardist tries to improve his trees and he plants so that seen from any standpoint the whole harmonizes; and that is just what the "fancier" does, he is continually improving his stock to make it more and more useful and more and more harmonious.

My utility man said, one thing he had against fancy stock was that they had to "breed in too much" and that took all the vitality out of them. Now this is simply the old cry of "wolf, wolf"; he does not know how to breed and he thought he could scare me into explaining, or in other words giving him for nothing what I have spent years and money to learn, but I did not scare worth a cent.

The real fancier spends more money to improve a flock of birds than any outsider ever gives credit for. The true facts are that there is no standing still, it is either forward or backward, all through nature and fowls are no exception to the rule. There is no need to breed any undesirable quality into fowls, because it is just as easy to breed what you want as what you don't want.

MISTAKES OF THE AMATEUR.—The amateur who sends for a setting of pure-bred eggs and breeds the males to the females makes his first mistake right there. It would be money and time saved, provided he wants to start a good flock, to write to the breeder and get a price on a male bird just a little removed in relationship from his own. But as a rule all are mated together, culls and good birds alike, the consequence is that the following season his chicks do not come up to the

standard at all and he blames the breeder he bought from instead of himself.

The next mistake he makes is in taking it for granted that because he paid a fair price for the eggs every chick hatched is bound to be perfect. That rarely happens especially in colored fowls. There are always more or less culls; one may be just off in color, another may be a little off in type, or it may have a poor comb, or some little defect in the legs.

NEED OF A STANDARD OF PERFECTION.—And right here is where he should invest in a Standard of Perfection to guide him in selecting his breeders for the season. It will save a lot of time and labor in the future; because it shows only ideal birds, and while there are very few such in the world, it gives the breeder something to strive for. We must have an ideal in mind before we can attain success in anything; and the mental image of an ideal bird of the breed we raise is about one of the best things we can have to aid us in building up.

If I can breed a flock of birds that will average 150 eggs a year; and they lay the bulk of these eggs during the fall and winter months when eggs are worth at least double the price of summer and spring eggs; if I can take a few specimens of this flock to the poultry shows and win, thereby increasing my sales and then finally when any individual hen gets so old that as a money maker her egg yield cripples her I can sell her for 20c. a pound dressed and she dresses 10 pounds or even seven which is very low will somebody tell me that is not a utility hen?

I think to be strictly utility a hen should be able to lay well, make a good show bird, and a good roast when you get through with her; if she fails in any of these points she is not utility but what I call a no account.

Questions Answered.

"For some time our young chickens have been infested with a small wiry worm or worms in the soft part of the gizzard opposite the inlet and outlet of it. The worms bore through the lining, and even through the gizzard itself. Though the chickens eat and grow well, it retards egg production in the pullets. I find they are so infested this year, although the eldest chicks have been raised apart from the old runs. In the old hens I find white deposits resembling lime in the mucous between the muscles and the skin. Now please tell me what ails my chickens and the remedy. I feed bran mash mornings, kaffir corn evenings with feed always at hand, corn or chick food for the young ones and a run on Bermuda grass."

[There are but two kinds of worms known to infest poultry, the round worm and the tape worm. The round worm varies in size from one-third to five inches long. Its color is white. The head is pointed like the sharpened end of a pencil; the tail blunt like the end of a finger. Once a flock of birds are infested with worms it means work to get rid of them, because all yards must be spaded up, the droppings must be collected often and burned as this is the greatest source of propagation. The chickens pick them out of the droppings and eat them, hence keeping up the supply.

The Remedy.—Dissolve in a quanti-

ty of water sufficient to make a mash for the birds to be treated two grains of santonine for each bird. Mix the mash quite dry, and add half a teaspoonful of castor oil for each fowl. When the oil is well mixed with the mash add the water in which the santonine is dissolved and mix thoroughly. Feed this to the birds at night so that they will not have any other feed after to crowd it through. Watch for results, and keep the droppings well cleaned up. You may have to repeat the treatment but it is a sure cure. Garlic is also a wonderful worm remedy and one that can be given easily. Just chop or grind up garlic in the food chopper and feed in a little mash. Worms are caused by feeding milk, raw meat, and sometimes by eating mice and things chickens pick up. I would spray the runs with a strong solution of Kreso Dip No. 1. This can be bought at drug and feed stores, and is a very good disinfectant.

SIDELIGHTS ON THE CHINESE EGG.

[Written for the Pacific Rural Press.]

Poultry growers of California are finding themselves in a very similar predicament to what the dairymen are facing, on account of the revision of the tariff, which is allowing Chinese eggs to be a factor in the egg markets.

A man who has given the imported egg question serious study, states that those who are handling the Chinese eggs are men who have not heretofore been identified with the egg business, but on the contrary are speculators who thought they saw an opportunity of making some easy money. They figured that prices would be governed next winter, largely by the price contracted for at Petaluma this year, which is 21 cents a dozen. After adding the charges of handling this price will be several cents higher.

The Chinese eggs cost about 15 cents a dozen, laid down in San Francisco, and when the cost of storing is added will cost the dealer about 20 or 21 cents a dozen, thereby leaving a large enough margin for them to find an outlet, even if they are an inferior article. On the face of it this looked to be a good thing, but the trouble seems to be that a large percentage of the eggs in each case are of inferior quality, or, as is often the case there are many broken ones in a case. Not being familiar with the game many of these would-be egg dealers are using careless methods in candling and oftentimes put the cases in storage without sorting at all. Our informant states that the result of this will be very pronounced next winter when they come out of storage, as it is his belief that such dealers will lose heavily and therefore will not be anxious to cut prices.

While the Chinese egg would be a

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MURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

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SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

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EGGS FOR HATCHING—Pure-bred White Rocks, \$1 per setting; \$6 per 100; until September 1. Mrs. J. B. Tupper, Ceres.

MAMMOTH BRONZE TURKEYS and eggs. Stock unsurpassed. Albert M. Hart, Clements, Cal. (Successor to Ed. Hart.)

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CHICKENS, DUCKS, GESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

LUFF AND WHITE ORPINGTONS. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

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Write today and get chicks for winter laying and excellent profits
THE BIHN HATCHERY Largest in the World. Capacity 165,000 Chicks **PETALUMA, CAL.**



Office Sonoma County Poultry Producers' Association, Petaluma.

serious factor in this State because of their inferior quality, the Manchurian egg is a different proposition. Poultry in that country are grain fed and consequently produce as good a quality as our domestic hens, but at a higher cost than that of those produced farther south.

EGG CO-OPERATION SUCCEEDS.

Eggs sold from the vicinity of Petaluma during 11 weeks ending May 9, 1914, returned over \$100,000 more to the producers than the same amount returned during the same time in 1913. That is something to take note of; for that is the hen's busy season, eggs are plentiful, 20,500 dozen more eggs are in storage than at the same time last year, Chinese eggs are coming by the millions, and the Sonoma County Poultry Producers' Federation, to whose organization this result is predominantly due, has had in its treasury, up to March 31, 1914, just \$576. Small capital for a big business! How was it done?

It was in January, 1913, that Senator J. M. Murphy of Cotati, T. Howard Hansen of Penn Grove, J. K. Bigelow of Sonoma valley, Chas. Romwell and A. K. Turner of Petaluma met one night in a brooder house near Penn Grove to figure a way to get living prices for eggs.

They had been demoralized to a certain extent by the cry of overproduction, set up by those speculators who had stored eggs the season before and had lost heavily. It was up to the speculators to make good their losses by bearing prices down. This worked while the Federation was organizing. Meanwhile the five men had called a meeting of Sonoma county poultrymen.

When the Federation was on its feet by the organization at Cotati, followed by other locals in that section, they induced a Los Angeles firm, the Kline-Simpson Co., to enter the market at Petaluma and pay Federation members the same price that was quoted daily on the San Francisco Wholesale Dairy Produce Exchange. Petaluma dealers had been paying 2 cents per dozen below San Francisco

quotations, the 2 cents nominally covering handling charges and profits.

A competitor paying Exchange prices and drawing poultry men into line must be forced out of business; so many Petaluma dealers put up signs like this, for example: "Exchange prices 19 cents. We pay 21 cents." This was the crisis for the Federation. Would their members be long-headed enough to see the game? Would they stick to their contracts with Kline-Simpson? Or would they sell to the other dealers at 2 cents a dozen more and force Kline-Simpson out of business?

Today the Federation is 600 strong. Local branches are operating in Cotati, Penn Grove, Bellevue, Hessel, Roblar, Two Rock, Sebastopol, Wilson, Chileno Valley, Sonoma, Tomales and Fallon. Two of these were organized recently. All have two meetings per month, one for business, the other for education on better methods of production and handling. Organizer W. R. Humphries is pushing his end of the work and the Federation hopes to include all of Sonoma county this year.

It has a contract with the Fred L. Hilmer Co. of San Francisco to take all of the eggs of its members at 2 cents a dozen below Exchange quotations; but never less than 21 cents a dozen.

How the Hilmer Co. can do this is their business; they have handled 50,000 cases of Petaluma eggs this season in the face of a market that has been as low as a 19½-cent weekly average. Certainly their interest is to influence the San Francisco market upward to the limit whenever Exchange prices go below 23 cents. The average cost of handling from Petaluma to retail market is 1½ cents, allowing ½ cent commission to the Hilmer Co. when Exchange prices are 23 cents or higher.

[Let it be understood that the Exchange prices are simply what is paid early each morning by one wholesale egg dealer to another on the San Francisco Wholesale Dairy Produce Exchange for the few eggs he thinks he will sell during the day to the retail trade or others, more than the supply he expects to receive from the country

that day. Since the Exchange price is the basis of wholesale prices, each wholesaler adds as much to that price as he can get from the retailers.]

Each member of the Sonoma County Poultry Producers' Federation is thus assured, till next December, of 21 cents a dozen for his eggs. He takes them to his shipping point, receives from the manager of the local association a receipt for them as graded No. 1 and No. 2. He sends the receipt to the joint office of the Federation and the Hilmer Co. at Petaluma and receives his check by mail. The Federation voted, May 2, to withhold 5 cents per 30-dozen case, to pay its expenses. If there should be any surplus it will be returned pro rata; for by its constitution no corporation profits may be made. This 5 cents pays salaries, clerical help, printing of circulars of information, etc.

The Federation sponsors the statement that millions of eggs are sold as Sonoma county eggs that never saw Sonoma county at all. They also report that Chinese eggs are being mixed with and sold as American eggs.

To make a distinctive market for Sonoma county eggs and thus avoid outside competition, the Federation plans to pack its member's eggs in tight sealed cartons guaranteed fresh and fancy, and labeled "Everbest." This will be of special value to the consumer when storage eggs are coming out in fall and winter.

The officers are: Chas. Romwell, Petaluma, president; Knox Bonde, Sebastopol, vice-president; G. P. Haskell, Petaluma, secretary-treasurer; and Herbert Hall, who represents the Hilmer Co.'s interests in Sonoma county, manager.

Petitions are being circulated by farmers and business men of Merced county, for the appointment of a farm advisor in that county.

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- 1—Better egg results than from any brand of "beef scraps."
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- CONTAINS 28% MORE EGG LAYING PROTEIN than beef scraps, and is pure, fresh, and sweet. TRY IT!

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The Home Circle.

Economy of Time in the Kitchen.

[Read before the Agriculture Extension Club, Grass Valley, by Mrs. G. E. CHAPPELL.]

There is no one model form for kitchens. So many factors have to be considered: location, climate, size, and the amount of money available for this part of the housekeeping menage. But for expedition of work, which is the goal toward which all improvement tends, one axiom will apply at all times and under all conditions—economy of time. This is a matter of individual application of mind to the subject as much as, if not more than, the conveniences.

But to take up the different factors in sequence: We are all agreed that the kitchen must be not too remote from the dining-room and storeroom; not exposed to the extreme heat of the sun; not too large; not curtailed in running expenses to favor other parts of the home.

In the large house with a large family, the pantry is essential. In the small home and small family without maids, I do not favor it, for the very obvious reason that it makes, instead of saves, work. I shall not consider today the kitchen of the mansion, but rather our kitchen. Contrary to the belief of many present, possibly, the small kitchen should be chosen. I have never yet seen one too small. Some of our city apartments have economized on kitchen space to the last inch. Think of the steps saved.

The question of curtains at the windows must be decided by the size of the kitchen and the size of the windows. Where curtains are necessary, ordinary cheesecloth seems to give the best service.

The stool or chair must not be ignored in kitchen furnishing. Rather must our busy housekeeper be encouraged to relax as often as possible, and to do more work in the sitting posture. Try it! The tray is another article of convenience that is not appreciated, yet a large dinner table can be cleared in two or three trips by using a commodious tray.

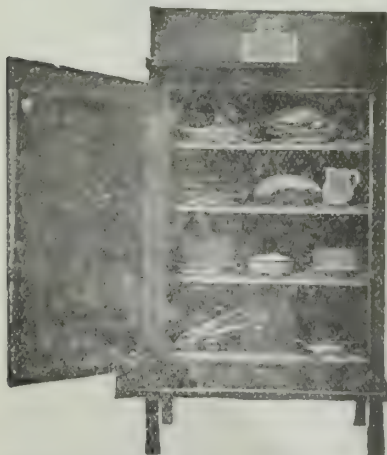
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of the sink saves many steps carrying tubs and water, yet this convenience is in very few country houses. Cold storage should be within easy reach, whether it be by ice-box, fireless cooker, or a dum waiter to the cellar. If it is not possible to have the kitchen shelves enclosed with doors, an ordinary window shade drawn down in front of them, out of working hours, adds to the neat appearance of the room. Upon these shelves dry supplies may be stored in glass fruit-jars, showing contents at a glance without the otherwise necessary labels.

A row of suspended snap clothespins will hold the kitchen apron, the dust cloth, wrapping paper, paper bags, memorandum pad, etc., and will be found more convenient and neater than the promiscuous nails, boxes, or untidy drawers. Towels may be hung in like manner if roller towels or paper towels are not used.

Brooms, brushes, mops, and dustpans may be kept out of sight, but if kept clean and hung in orderly array, do not detract from the general appearance of the kitchen if their presence is a question of convenience. The ironing board that is swung from the wall on hinges saves many steps. A gingham bag made to fit can protect the cover from dust when the board is not in use.

A few humorous pictures to adorn the walls are better than many of those advertising calendars that are so frequently seen; and a growing plant or two on the window sills have an esthetic value in such prosaic surroundings.

In mild climates a coal or wood range is unnecessary, and in fact they are becoming obsolete in our large cities, regardless of climatic conditions; as electricity is now within the reach of all except possibly the remote rancher; and if he is progressive he will generate his own gas.

The next step is the arrangement of kitchen utensils and supplies. To be efficient we must have sufficient. The carpenter will not attempt to build without proper tools; no office does good work without modern equipment; nor can the kitchen do its share of the world's work when handicapped by lack of facilities and supplies. When you buy for your kitchen, get the best. With the spirit of pride will come joy in your work, and black drudgery flies away.

You all know of the kitchen cabinet that contains, it seems to me, everything. Recall the scene of your grandmother making a cake: Down cellar for the butter, to the barrel for the sugar and to the barrel for the flour; another trip for the milk and eggs; to the pantry for the flavoring, and so on and so on.

Today we stand in one spot and reach for almost everything. If we have to take two steps we begin to figure on how to eliminate them.

A century ago every pot and pan was out of sight. Today the up-to-date housekeeper has them hanging in neat rows near the stove, if not on a rack made for the purpose. Even pan and kettle covers have their rack. To me no parlor looks more attractive than the white kitchen. White paint, blue and white oilcloth on the walls, blue and white linoleum on the floor, white oilcloth on table, shelves, drain-board, and possibly back of stove and sink. I defy anyone to say this kitchen is harder to keep clean than any other kind. It may be kept cleaner, because you cannot overlook the dirt.

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We do not want to be like Ma Flickenger, who says "the only way to keep clean is to wear something that does not show the dirt."

I cannot tell you everything about a kitchen, because I do not know it all myself, though I am learning every day. But I want to add one more point before leaving this subject, and that is to emphasize the need of a good clock in the kitchen. It is amazing how much can be accomplished by keeping one eye on the time-piece. How long does it take you to wash your dishes? How long does it take you to sweep and dust one room? Not long ago I had a maid who thought the work for a family of two and one-half was very hard. I asked her to co-operate with me to determine the value of time, and I made out a list of questions similar to the two quoted. She answered the first

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two and I never could get her to answer any more. When it took ten minutes to build two fires and twelve

minutes to wash the breakfast dishes, the other work sank into insignificance accordingly.

This brings us to the psychology of kitchen work. Did you ever stop to think that every time you enumerate all the work you have done, that you are doing those tasks just that many times more? Instead of saying to your neighbor, "I'm so tired, I've swept and dusted, baked, washed, ironed, and mended until I'm ready to drop, I wish I never had to see a kitchen again!"—rather tell her how you figured out how to dovetail your work until you are astonished with what facility your two hands can work at the same time at different tasks.

Our Young Folks

The Transient.

(Continued From Last Issue.)

The morning went slowly. Lessons, here, seemed confused until one got into the swing of the really well-planned curriculum. By lunch time, Gladys's head ached, and she wanted a dark corner in which to cry. There were no classes for two hours, and everyone was free to go in the garden.

"Well, how do you like it?" asked Catherine, who, with Emily, strolled over to the newcomer's side.

"I don't like some things," said Gladys, slowly.

Estelle and Hope came up. They, too, had taken a fancy to the new girl. "What don't you like?" inquired Hope.

Gladys grew crimson. Estelle laughed.

"I believe it's us!" she exclaimed, her eyes dancing with merriment. "If it were the government, she'd say so at once."

Four pairs of eyes turned on Gladys. They seemed to her like searchlights.

A sudden terror seized her, terror of these bright young creatures. She knew how mercilessly they could talk. She almost shivered at the thought of a battle with them.

"Come, you have to answer a civil question," went on Estelle, banteringly. "Don't you like us?"

Gladys's fear passed. She was again what her mother had taught her to be, —a girl who could not dissemble.

"I like you very much," she said promptly, "but not some of your ways!"

"Well, did you ever!" cried Catherine, offended.

"Hold on, Kitty," said Hope. "Let's hear what's amiss with us."

"The way you talk of your teachers," ventured Gladys. Her heart was beating wildly, and her face was crimson.

"You asked me!" she almost pleaded. If they didn't like her, and set the other girls against her, what a terrible six weeks she would have!

"That's true," said Estelle. "Play fair, girls! Just what displeases your highness?" she mocked, to Gladys.

"Yes, we might improve," drawled Emily.

"No, I don't think you will," retorted Gladys, taking her courage with both hands, "because you think you're right. But—but," she faltered a little, "I thought one should speak to a person as one spoke of them! That's all."

There was a moment's silence. Her eyes fell. Tears fell, too, on her crimson cheeks. The girls rose and turned away. She felt an unspeakable loneliness and desolation.

But Hope turned quickly back. "Wait, girls," she said. "She's right!"

Estelle drew a deep breath. She had been longing to turn back, too, but fear of her companions' sneers had daunted even a tennis player.

"I think she is," she found courage to add.

"Oh, well, it's the end of the term, and we're all worn out," so Catherine excused herself. "But of course, it's not!"

"It's not sportsmanlike," cried Hope. "Anything else, Gladys?"

But the summons for all who were not at the games to go for a walk, under Miss Kent's chaperonage, dispersed the group.

PART II.

Gladys began to take hold of things in a few days. She formed her own very clear little opinions of those about her, but it was an opinion based on good-will, with a tendency to overlook flaws.

Hope coached her in tennis, and, as one of the more earnest students was giving up sports to secure a safe majority of mathematical marks, Gladys was allowed to play in her stead. This spared her the walks under either Miss Kent's or Miss Dunbar's nervous leadership!

"Oh, you can't make out they're perfect, any of them," was Hope's reply to her defence of the last-named teachers. "But I suppose we're not saints. Now, try to serve from your wrist, see?"

The weeks wore on, until there was but one and a half before examination day. There were three of these, but the first was so called par excellence! Those who did well on the earlier papers usually went triumphantly through the succeeding days, while those who failed lost heart and ceased to try very hard!

As this crucial point in the school year came closer, even Miss Ward and Miss Prince fell victims to the prevailing epidemic of nerves, nor did Hope, Estelle, or even Miss Damer escape. The music teachers, loud in their laments over broken practice-hours and omitted lessons, indulged in Cassandra-like prophecies of the Commencement-day music! They hung outside the examination rooms, ready to seize their prey, as the prey came out with ink-stained fingers and roughened hair! Gladys, who took no part in the examinations, ran messages, carried glasses of ice-water, received the books which the unhappy students who trusted to a last cram might not carry into the school-room, and was generally useful.

She had been more useful than she knew! Her little dictum, "Don't speak of people as you don't speak to them," had been quoted, and had made an appeal, but now everything—principals and principles, theories and practices—seemed fused into one wild atmosphere of confusion and breathless hurry.

Gladys's optimistic view of characters was rather dimmed these last few days. The girls began again to grumble aloud, those who had ever left off.

"They're a set of old cats!" Estelle fumed, as she found that her practice-hours had been changed, so that she was rather unfairly required to write a French examination at the same time she was playing the "Humoresque" on quite another floor. "They've been at this time-table all night, to see how badly they could mix things up."

"But it's only a mistake," said Gladys, anxiously soothing.

"Miss Prince will set it right!"

"Oh, it's all very well for you to talk," retorted the exasperated Estelle. "You float round doing what you like, and tantalize us by lying under a tree while we're slaving!"

As Gladys had taken up this position in order to be near Estelle's seat in the school-room, and hand in glasses of water, the injustice of the reproach was patent. She rose and walked quietly away. Estelle looked after her with compunction, but she could not follow her. She had to placate Madame about the practice!

Gladys, with tears in her eyes, walked on, not noticing that she was encroaching on the plot of lawn reserved for the faculty. When she suddenly pulled herself up, on hearing voices from Miss Prince's study window, she was too dazed to retreat at once.

"I shall be sorry to lose you, Miss Ward," Miss Prince's crisp tones were icily polite. "But as long as it is my school, I must do what I think best! Miss Kent and Miss Dunbar have been with me a long time, and I cannot ask them for their resignations!"

"I can only repeat that if they stay, I do not," Miss Ward's voice was hard.

Poor Gladys gave a little cry, half hysterical laughter, half real grief. Both ladies turned and saw her.

"Gladys," said Miss Prince, severely, "what are you doing?"

"I want to go home," sobbed Gladys. "I want to go where people don't quarrel. Everybody quarrels here."

The two women looked at each other. Then Miss Ward put out her hand.

"You can't send the poor things away; I see that." She spoke as if

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F. A. SOMERS, President.
R. H. CHILDS, Secretary.

Dated May 22, 1914.

the idea of sending "the poor things" away were preposterous. "Call that child in," and it was "in" Miss Prince's arms that Gladys wailed out her despairing longings for a place where "people liked each other."

"They're going home for the holidays," said Gladys. "They ought to be happy. Do you suppose it's the examinations does it?"

"Well, they'll be over tomorrow," said Miss Prince. "Now go to bed, my dear. I wish they all loved love as you do!"

(To Be Continued.)



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THE MARKETS.

San Francisco, June 3, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Local prices show no change whatever, the market being very quiet. Supplies of northern grain are ample, and with every indication of an unusually large crop, both in California and the north Coast states, there is no firmness as to values.

California Club, ctl....	\$1.60	@1.65
Forty-fold	1.65	@1.70
Northern Club	1.60	@1.65
Northern Bluestem ...	1.65	@1.70
Northern Red	1.52½	@1.65

BARLEY.

There has been a little more speculative business in the last few days, but the spot market is quiet, with buyers merely filling routine requirements. The outlook for values is not encouraging, with large crops both here and in the East, and a heavy export movement is expected.

Brewing and Shipping. Nominal	
Choice Feed, per ctl....	\$0.97½ @1.05
Common Feed	Nominal

OATS.

There is no change to report in values, as the scarcity of this grain prevents any decline. The demand, however, is confined to narrow limits.

Red Feed	\$1.20 @1.30
Gray	Nominal
White	1.30 @1.35
Black Seed	Nominal

CORN.

Local offerings continue rather light, and values are accordingly steadily maintained. The demand is not especially strong, though some inquiry is coming out.

California Yellow	Nominal
Eastern Yellow	\$1.80 @1.85
Eastern White	Nominal
Egyptian	1.85 @1.90
Milo Maize	1.80 @1.85

RYE.

This grain is entirely nominal, with practically nothing on hand, and little interest on the part of buyers.

Rye, per ctl.....	\$1.45 @1.50
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BEANS.

Values show comparatively little change this week. California bayos are very scarce, and prices have again been marked up. This, however, has turned the demand toward Mexican stock, which is offered freely at a lower range of prices. The only other quotable change is on pinks, which are somewhat easier. The market in general continues comparatively active for this time of year, and in view of the limited supply remaining in the State, prices are firmly held, with indications that they will be maintained until the new crop is ready. The New York Journal of Commerce says:

"California blackeye beans, which are practically out of the spot market, are being freely bought, it is reported, for September shipment out of the new crop. While prospects for the coming crop of these beans are fair, the weather so far has been rather unfavorable, and therefore growers are not inclined to sell ahead.

(On wharf.)

Bayos: Cal., per ctl....	\$7.00	@7.50
Mexican	4.50	@5.00
Blackeyes	7.50	@7.75
Cranberry Beans	4.25	@6.00
Horse Beans	1.90	@2.15
Small Whites	5.00	@5.25
Large Whites	3.90	@4.50
Limas	6.50	@6.85
Pea	4.25	@4.50
Pink	3.75	@4.00
Red Kidneys	Nominal	
Mexican Red	6.00	@6.25

SEEDS.

Business is quiet all around, but values are steadily held, with no excessive offerings.

Alfalfa	12½ @15 c
Brown Mustard, per lb....	3¼c
Canary	7½c
Hemp	2½ @ 3 c
Millet	2½ @ 2¼c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Business is rather quiet, both locally and for export, values being fairly steady at the old quotations.

Cal. Family Extras....	\$5.80	@6.20
Bakers' Extras	4.80	@5.40
Superfine	3.90	@4.20

Hay and Feedstuffs.

HAY.

The local market remains in about the same shape as before, with abundant offerings and an easy feeling as to prices. Consumers are going slow, anticipating a plentiful supply later on, and have not yet shown any disposition to put in large stocks. The consuming trade is discriminating in favor of old hay, paying little attention to new crop offerings, which are now coming in. Prices of \$8 and \$9 per ton are reported for some of the new wheat hay. First cutting alfalfa is arriving freely, and finds little demand. Dealers continue to urge growers to use care in baling, as the presence of dirt in the bales will be more detrimental to its sale than usual this season.

No. 1 Wheat, or Wheat and Oats	\$11.00@12.00
do No. 2	9.00@11.00
Lower grades	8.00@ 9.00
Tame Oats	8.00@12.00
Wild Oats	7.00@ 8.50
Alfalfa	7.00@ 9.50
Stock Hay	5.00@ 6.00
Straw, per bale.....	60 @ 90c

FEEDSTUFFS.

Bran has been marked up a little, as the output is light, and supplies have been hardly up to the demand. Rolled barley is a little lower, but finds a very fair demand, being substituted for other feeds at the present prices.

Alfalfa Meal, per ton....	\$17.00@18.00
Bran, per ton.....	25.00@26.00
Oilcake Meal	34.00@35.00
Cocanut Cake or Meal..	26.00@27.00
Cracked Corn	41.00@42.00
Middlings	32.00@34.00
Rollod Barley	21.50@22.00
Rollod Oats	28.00@29.00
Shorts	26.00@27.00

Garden Truck.

VEGETABLES.

Business has quieted down a little this week, but prices are comparatively well maintained, except on a few lines that are coming forward in larger quantities. Local tomatoes are a little cheaper, and a further drop is expected soon, as arrivals are increasing. So far, however, Mexican and Florida stock is still coming in. String and wax beans, which were a little higher at the opening of the week, have dropped back to the former level, with supplies in excess of the demand, and peas are rather easy. Ordinary offerings of rhubarb are a little higher, while cucumbers show a decline, with rapidly increasing arrivals. Eggplant is lower, and green corn has taken quite a drop, though fancy stock from Alameda will still bring as high as \$4.50. Asparagus is slightly lower.

Cabbage, per ctl.....	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.....	12½ @ 17½
Carrots, per sack.....	35 @ 50c
Green Peas, lb.....	2 @ 5c
Tomatoes, Southern, crate	1.25 @ 1.75
Beans: Wax	3 @ 5c
String	3 @ 5c
Rhubarb, box	60c @ 1.00
Asparagus, box	75c @ 1.25
Cucumbers, box	40c @ 1.00
Eggplant, lb.....	6 @ 10c
Green corn, sack.....	1.50 @ 2.25

POTATOES AND ONIONS.

Most of the business at present is on new potatoes, which are now coming forward from the river district in ample quantities, and sell at lower prices than before. Some Oregon stock is still offered, and choice lots bring an advance. Imported onions are about cleaned up, and new reds show a sharp decline, new garlic also being lower.

Potatoes:	
River Whites	40 @ 60c
Garnets, lb.....	1½ @ 2c
New Potatoes, lb.....	1¼ @ 1½c
Oregon Burbanks	75c @ \$1.10
Sweet Potatoes, per ctl..	2.25

Onions: Bermuda, crate..	2.00 @ 2.50
New Red, ctl.....	2.00 @ 2.25
Garlic, new, per lb.....	5 @ 8c

Dairy Produce.

POULTRY.

Arrivals have not been excessive this week, though local stock is still coming in freely. Prices show no change whatever, but the demand is a little slack, causing a rather easy feeling.

Large Broilers	22 @ 23 c
Small Broilers, per lb...	21 @ 22 c
Fryers, per lb.....	24 @ 25 c
Hens, extra, per lb.....	19 @ 20 c
Hens, large, per lb.....	19 @ 20 c
Small Hens, per lb.....	18 @ 19 c
Young Roosters, per lb..	24 @ 27 c
Squabs, per doz.....	\$2.50 @ 3.00
Geese, per pair	2.50 @ 3.50
Ducks, doz.....	6.50 @ 8.00
Turkeys, live, per lb....	20 @ 21 c
do dressed, choice....	23 @ 25 c

BUTTER.

No change whatever has been made in prices for the last week. Offerings, however, are large, and there is an easy feeling in the market, owing to the fact that stocks in storage are far larger than a year ago, and storage operators show some hesitation about making further purchases, though they have bought at lower prices than last year.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras ..24 24 — 24 24 24	
Prime	
Firsts...23½ 23½ — 23½ 23½ 23½	
Firsts ...23½ 23½ — 23½ 23½ 23½	

EGGS.

Eggs are quite steady, with an advance of ¼c over a week ago in extras, and 1½c in pullets. There has been a heavy movement into storage at higher prices than last year, but so far there has been no great curtailment of purchases.

Thu. Fri. Sat. Mon. Tu. Wed.	
Extras ...23 22½ — 22½ 23 23	
Firsts ...21½ 21½ — 21½ 21½ 21½	
Selected	
Pullets...21 21 — 21 21 21½	

CHEESE.

Offerings continue large, and with the principal requirements satisfied, prices show a little decline.

Fancy California Flats, per lb...	13 c
New Young Americas, fancy....	15 c
Monterey Cheese	13½ @ 14 c

At Los Angeles the dairy produce markets for the past week have been as follows:

Wed. Thu. Fri. Sat. Mon. Tu.	
Butter:	
Extras...24 25 25 — 25 25	
Eggs 23 23 23 — 23 23	
Cal. Cheese:	
Flats ...13½ 13½ 13½ — 13½ 13½	

Deciduous Fruit.

Strawberries are holding up in good shape, with a good demand and rather light offerings, though the Longworth variety has been marked down a little. Practically everything else in the berry line is considerably lower, as supplies are coming in very freely, though gooseberries as usual are rather firm. Arrivals of miscellaneous summer fruits are now increasing steadily, but prices are pretty well maintained. The local demand is not above the average, but the crop shortage in several lines is having its effect. Apricots in crates are firmly held, though lugs are rather easy, and peaches are on the decline. Cherries are quite firm, at least for small packages, the leading varieties being scarce and higher than last week. Arizona figs are also higher. A good many plums are appearing, and find a fairly good market. Cantaloupes are appearing in larger quantities, with a consequent reduction of prices, and a few watermelons have come in, although they are not yet much of a feature in the market.

Blackberries, chest.....	\$3.50 @ 4.00
Loganberries, chest.....	3.00 @ 4.00
Raspberries, chest.....	8.00 @ 10.00
Gooseberries, lb.....	4 @ 12c
Strawberries:	
Malindas, chest	2.50 @ 5.00
Banner, chest	2.50 @ 4.50
Longworths, chest	3.00 @ 4.00
Apples: Newtown Pippins ..	1.00 @ 1.75
Oregon Spitzenbergs ..	1.40 @ 2.00
Apricots, crate	75c @ 1.50
do lugs	1.25 @ 1.50

Peaches, crate	65c @ 1.25
Plums, crate	75c @ 1.00
Cherries:	
Black, box	75c @ 1.00
White, box	65 @ 90c
Royal Anne, box.....	75c @ 1.00
Figs, box	2.00 @ 2.25
Currents, chest	6.00 @ 8.00
Cantaloupes, crate	3.00 @ 3.50
Watermelons, lb.....	5 @ 6c

Dried Fruits.

The local market remains quiet, with all prices as last quoted. Spot supplies are cleaned up in practically all lines, and the trade, after its first spurt of buying, is disposed to hold off in regard to new-crop offerings. Most buyers have provided for their early requirements, and prefer to await developments before taking on large supplies; and the local packers seem to be following their lead, though all familiar with conditions take a firm view as to the outlook. Prunes, which were the leader in point of firmness a few weeks ago, have eased off a little in the Eastern market, though nothing can be had from growers below the quoted range. Little attention is given to peaches, and buyers are cautious about taking hold of apricots at the present high prices. Buying of raisins is for the most part on a hand-to-mouth basis. The New York Journal of Commerce says:

"The market for California future prunes is still unsettled, but according to some reports the undertone is firmer. Bids of 5½c f.o.b. basis for the three sizes, 40s to 60s, have been turned down, but buyers persist in making offerings at this figure, and a number of such bids are said to be still under consideration by packers. Whatever of weakness market conditions disclose is held by well informed factors to be due to the light demand from Europe and the desire of short sellers to depress the growers' market. On the spot jobbing trade is reported to be as good as could be expected at this season of the year, but on the whole the movement is light. However, with stocks in few hands the tone of the market is firm.

"Peaches are inactive so far as future shipments are concerned, and there is little movement as yet in spot goods. However, the market is firm on the basis of previous quotations. No business of consequence is noted in apricots for immediate or future delivery, but holders are not trying to force sales and the market closed firm.

"California muscatel loose and seeded raisins are getting little attention for immediate or future delivery, and prices are somewhat nominal. For seedless Sultanias there is reported to be a good consuming demand, and as stocks are closely controlled, the market has a firm tone."

Evap. Apples, 1914.....	Nominal
Apricots, 1914	9 @ 9½c
Figs: White, 1914	3¼c
Black	Nominal
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	6 @ 6½c
Peaches, old and new....	4 @ 4½c
Pears	Nominal
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanias	4 c

Citrus Fruits

Due to the heavy arrivals of oranges in the East last week, much of which was clean-up stock, the market was weak and lower on unsound stock, although it is somewhat higher on good navel. It is stated that there are less than 600 cars of navel oranges yet to be shipped. Valencias are coloring up fast and Tulare's crop of 900 carloads will soon be cleaned up.

On the New York auction, June 1, 50 cars of navels sold for an average of \$1 to \$3.40, two cars of Valencias selling for an average of \$2.40 to \$4.05. Other markets, including Philadelphia, were somewhat lower on both navels and Valencias. Lemons sold in Eastern markets at around \$5, although more recent sales have been made at \$5 f.o.b. California, and the market is strong owing to the extreme hot weather.

To date 27,110 carloads of oranges and 1528 carloads of lemons have

been shipped from southern California this year, making a total of 28,638 cars for the year as compared with 10,252 cars of oranges and 1363 cars of lemons, or a total of 11,615 carloads, last year at the same date.

Lemons have been marked up a little in the San Francisco market, and the movement for nearby consumption is fairly active. In other citrus lines trading is of only about average proportions for this time of year, the consuming demand for oranges being rather light.

Oranges: Navels, box.....\$1.00@ 2.50
Valencias, box 2.00@ 3.00
Tangerines, crate 75c@ 1.25
Grapefruit, seedless, box. 1.50@ 2.50
Lemons, box 2.75@ 4.50
Limes, case 9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

While the almond association has not yet announced prices, considerable business has been done in the northern part of the State with Eastern buyers, who appear anxious to place contracts for the new crop. The largest sale reported is in the Durham district, where the prices quoted below are said to have been obtained. Nothing has been done as to new walnuts, and prices are altogether nominal, as the old crop has been cleaned up.

Almonds, 1914 crop:
Nonpareils 17 c
I X L 16 c
Ne Plus Ultra 15 c
Drakes 13 c
Languedoc Nominal
Hardshells Nominal
Walnuts, new crop:
No. 1 Softshell Nominal
No. 1 Hardshell Nominal
Budded Nominal
No. 2 Nominal

HONEY.

Supplies in the local market are gradually increasing, but so far most offerings are pretty steadily held at the former prices. Shipments are now going forward from most of the producing districts, and in most places the output is large.

Comb: White 12 @13 c
Amber 10 @11 c
Dark 8c
Extracted: White 7 @ 8 c
Amber 4½ @ 6 c
Off Grades 3 @ 4 c

HOPS.

There is no very active demand at present, but the market is steady, with some new-crop contracts going through right along. It is reported that both California and Oregon crops will be a little below last year, although the Sacramento district looks well.

1913 crop 15 @17½c
1914 crop 14 @15½c

Live Stock.

Prices are well maintained, and there is no change this week, aside from the removal of the ¼ to ½c reduction for grass-fed cattle. Shipments of cattle to this market are still very moderate, and stockmen continue on the lookout for feeders. Calves are scarce and firm, and sheep are coming in slowly, with ranchers less disposed to sell than they were a few months ago.

Steers: No. 1 7¼ @ 7½c
No. 2 7 @ 7¼c
Cows and Heifers: No. 1.. 6¼ @ 6½c
No. 2 5¾ @ 6 c
Bulls and Stags 3½ @ 5 c
Calves: Light 8½ @ 9 c
Medium 8 @ 8½c
Heavy 7 @ 8 c
Hogs: Grain-fed, heavy... 8 c
150 to 250 lbs. 8¼ @ 9 c
100 to 150 lbs. 8½ @ 8¾c
Prime Wethers 5½ @ 5¾c
Ewes 4½ @ 5 c
Milk Lambs 6 @ 7 c

DRESSED MEATS.

Steers 12 @12½c
Heifers 11½ @12 c
Veal, large 12 @13 c
Small 14 @15 c
Mutton: Wethers 11 @11½c
Ewes 10 @10½c
Suckling Lambs 13 @14 c
Dressed Hogs 12½ @13½c

WOOL.

San Joaquin 12@14c
Humboldt and Northern...16@21c
Calaveras 14@18c

Some growers are still holding in expectation of better prices, but the greater part of the spring clip in California has been sold and is being shipped out.

HIDES.

There is an active demand for country hides in this market, with very moderate offerings, and prices are very firmly held.

Heavy Steers, over 56 lbs. 15 c
Medium 14½ @15 c
Light Steers, under 48 lb.14½ @15 c
Heavy Cows, over 50 lb..14½ @15 c
Light Cows, 30 to 50 lb.13½ @14½c
Kip 15½ @16 c
Veal 18 @19 c
Calf 18 @19 c

Dry—

Dry Hides 25½ @26½c
Dry Kip, 10 to 15.....24½ @25½c
Dry Veal, 5 to 10..... 29½c
Dry Calf, 7 down..... 29½c

Horse Hides—

Salt: Large \$3.00
Medium 2.50
Small 1.00

HORSES.

There is practically nothing doing in the local market. No large shipments have come in this week, and in fact shippers are very much inclined to await more favorable conditions. Business at the private barns is of little consequence, with very few inquiries from either local or outside buyers, and prices are irregular. It seems that this condition is simply a reflection of the extreme dullness of general business, with the normally dull summer season at hand, in view of which buyers are willing to wait until the stock is actually needed. With much lower prices for feed and the general anticipation of more commercial activity in the fall, it is expected that horses will find a much better market at that time.

Heavy drafters, 1700 lbs. and over\$275@325
Light Drafters, 1500 to 1650 215@230
Chunks, 1350 to 1500..... 190@210
Wagon Horses, 1250 to 1350.. 150@200
Green Mountain Range..... 120@140
Delivery Horses, 1050 to 1250 100@125
Desirable Farm Mares..... 75@100

MULES.

1200 lbs.\$200@250
1100 lbs. 150@200
1000 lbs. 125@175
900 lbs. 75@125

SEECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., June 1, 1914.

There has been quite a movement of cherries, apricots and plums, with a few part cars of peaches, from the State within the last week, and in fact the demand far exceeds the supply. Business is noticeably active throughout Canadian markets and in the middle and Southwest. The auction markets within the last few days have shown rather a disappointing attitude through practically no apparent reason, unless this can be attributed to the general financial unrest throughout the country, but which seems to have settled more particularly in the far east.

The quality of the shipments, with the exception of Royal Anne cherries, which were badly affected by the recent rain, is excellent. Apricots are free from scale and of good size, a large percentage of the pack running 4 x 5. Clyman plums are considerably larger than they were at this time last year, and the movement of this variety will be very heavy, as will also Alexander peaches during this coming week. Formosa are in light supply and we look for the beginning of the Tragedies by the last of this week. A few boxes of Triumph peaches have shown up on the market and these will be moving liberally by the latter part of the week.

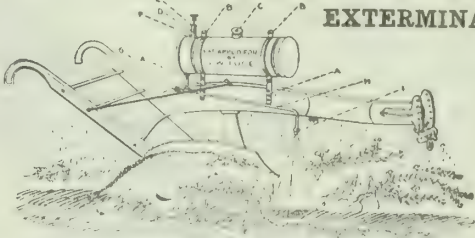
Burbanks are heavier than any other variety of plum. Japanese varieties are light; Wicksons about three-fourths of a crop. Santa Rosas set

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heavily in all sections, but the drop has been very noticeable within the last ten days. The heaviest movement of Black Oregon is over, and within ten days they will be practically out of the California market. Bartlett pears are showing up exceptionally well, though the drop has been heavy in some districts. There is a large amount of blight in the river districts, and this will unquestionably affect the crop for next season.

Bartlett pears, under favorable weather conditions, should move in two weeks. Cannons are buying freely at \$50 per ton, a few thousand tons having been purchased at this price. There seems to be quite a brisk demand within the last few days for canning varieties of peaches, with liberal offerings at from \$25 to \$35 per ton.

Indications are that there will be a heavy Malaga crop, estimated at over 3000 cars. Tokays are set heavily in all districts, and, on account of the luxurious foliage, it is likely they will be able to withstand sunburn.

Reports from the Northwest indicate that there is a heavy crop of cherries in the Wenatchee valley and a fair crop of Italian prunes in Idaho. Eastern market reports for the week were as follows:

New York—Beauchamp, \$1.10; Bings, \$1.12½ @ \$4; Biggerreus, \$1.16 @ 1.70; Centennials, \$1; Clymans, \$2; Newcastle Apricots, \$1.60; Oregon, 95c @ \$2; Pringle Apricots, \$1.40; Rockports, 80c @ \$1.14; Royal Annes, 75c @ \$2.85; Seedling Apricots, \$1.87½ @ 3.12½; Tartarians, 75c @ \$4; Gov. Wood, 75c. Chicago—Royal Apricots, \$2.43; Biggerreau, \$1.28 @ 1.62; Centennials, \$1.10;

Clymans, \$1.07 @ 1.50; Newcastle Apricots, \$1.90; Oregon, \$1.72; Pringle Apricots, \$1.49; Rockports, 67c @ \$1.41; Royal Annes, 85c @ \$3; Rose Apricots, \$2.74; Seedling Apricots, \$1.37; Tartarians, \$1.31 @ 2.25; Gov. Wood, \$1.40 @ \$1.50.

PUBLISHER'S DEPARTMENT.

At the time this is written we have not seen a completed copy of the seventh edition of "California Fruits," though we expect before this paper reaches our readers that several hundred copies will have been delivered to our office. We have seen the printed sheets of text as well as the plate engravings. The dummy cover has been examined and O.K'd, and the gold back and side stamping is being done. Send us your orders now for first copies. Price \$3 per copy post-paid.

Our subscription force were not all in action last week, which accounts for the fact that the total number of new names added to our list amounted to only 201. This week the boys say they will make up for lost time, so that we expect to secure enough to break the record.

Again we wish to call your attention to our new 1000 Questions and Answers book. You should have this on your farm; it will be worth a great deal to you. Send for our special subscription offer in connection with it.

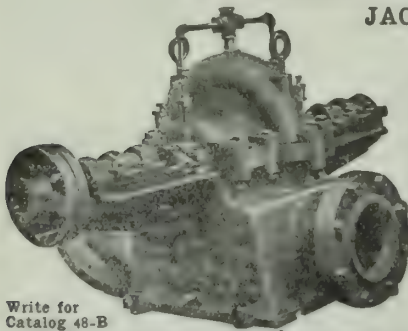
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In revising this seventh edition, Prof. E. J. Wickson is putting in lots of new material besides bringing the figures down to date. The book will contain over 550 pages of text and line cuts, besides 24 full-page half-tone engravings. The binding will be of blue cloth vellum, with the back and side stamped in gold, making altogether a handsome, practical volume, fit for any library and a necessity to every fruit grower.

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Pacific Rural Press

420 Market Street

San Francisco

THE PACIFIC RURAL PRESS

Vol. LXXXVII. No. 24.

SAN FRANCISCO, SATURDAY, JUNE 13, 1914.

Forty-Fourth Year.

The Forty-Fourth California State Fruit Growers' Convention.

[Written for the PACIFIC RURAL PRESS.]

If you are ever billed to address a bunch of California farmers, come primed to be shot full of questions at all stages of your lecture and be ready to hold a long after-meeting.

The outstanding characteristic of the well attended enthusiastic meetings of the California Fruit Growers' Convention during the week of June 1 to 6 at the University Farm, Davis, was the practical questionnaires that followed all the lectures. And not only questions came from the audiences, but questions were answered out of the personal experiences of the fruit growers themselves. The half-hour recesses between lecture hours were spent in discussing questions, vital and intensely interesting because they affect the living of the men and women involved.

Not only the fruit growers, but also the stockmen had several meetings, and more than this, the farmers' women and the woman farmers had their important, enthusiastic meetings from beginning to the end of the convention.

The oft-repeated regret was heard on every hand, "I wish I could take

in three or four meetings at this hour." For at every lecture, at least six meetings were going on. The next regret was that since one could not distribute himself to six meetings at a time, it would be great if the papers and discussions could be published. The reason there will be no comprehensive report of even the papers read, to say nothing of the valuable discussions that followed, is that the State Horticultural Commission is not provided with enough money.

(Continued on Page 664.)



Between Sessions of Popular Assembly, University Farm.



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FRANK HONEYWELL - Publisher and Manager
W. H. SCHRADER - Advertising Manager
D. L. SCHRADER - Subscription Manager
R. E. HODGES } Assistant Editors
J. C. LOOMIS }

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 9, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date	Normal to Date.	Maximum.	Minimum.
Eureka.....	.84	36.40	45.40	58	46
Red Bluff.....	.80	33.33	24.75	84	46
Sacramento..	.24	20 08	20 03	78	50
S. Francisco..	.15	29 46	22.19	70	48
San Jose.....	.05	19.18	16.76	76	44
Fresno.....	.14	10.99	9 68	86	50
Independ'ce	.00	12.01	9.53	80	38
San L. Obispo	.22	31 20	20.51	74	46
Los Angeles..	.08	23.64	15.59	76	52
San Diego.....	T	9 82	10 01	70	56

T means trace.

The Week.

The week-long fruit growers' convention rests from its labors and its works do follow it—largely in this issue of the RURAL PRESS and continuously in later issues, for we find the transactions of the convention unusually rich in accounts of successful working with fruits and fruit products, which will be helpful to our readers. It is of such matters that we make most of in these columns, because almost anyone can make philosophies for himself, while the best guides to actual work are drawn largely from the experiences of others. Philosophies may include fallacies and still comfort those who cherish them. Practical production must exclude fallacies—or suffer for it in pounds per acre or cents per pound. Therefore we try constantly to keep production straight, even though philosophy goes crooked. Before we finish with the work of the convention, nearly all the leading fruits will be reviewed by those who are up to date in points of view and of successful practice.

The other great affair of last week, the Lassen volcano, did not land in history quite as squarely as did the fruit growers' convention. At last accounts we have seen, the Lassen eruption did not quite know whether it was a volcano or a geyser. One observer reports that a lot of snow water ran into a hot hole in the rocks and expanded so fast that it had to come out forcibly and pull the hole out after it; that there was really no lava flow as of a true volcano, but an outburst of dry steam. It seems to be, then, a phenomenon fit for an omen for those who wish to believe that the State is going dry this fall, for nature will not give us even a wet volcano.

Innocents Abroad.

Now that these two great California affairs are satisfactorily disposed of, at least for the

present, we may indulge in a paragraph or two, of our own personal affairs. Our publisher, Frank Honeywell, departed for the North and East on Monday last with the sandwiched purpose, "recreation and business," which those who break out from the commercial treadmill generally indulge in. Mr. Honeywell has earned this respite, for he surely has put in a most strenuous seven years or so since he began the uplift of the RURAL PRESS from the rut of leisure in which it had previously been running for a decade or more. Mr. Honeywell came to the RURAL with experience, money and confidence that this journal could be notably advanced in public esteem, and was willing to work all his resources overtime to that end. Everyone who knows this journal, or even the publishing business generally on this coast, does not need to be told how notably Mr. Honeywell has succeeded in his undertaking. Some of them who are better acquainted with business affairs, probably understand his achievement better than we do. But we know enough to be sure that the advance of this journal during recent years must be accepted as a demonstration of the importance of a high ideal of quality, of adherence to a fixed policy of returning the greatest possible value for patronage and of building business in a way to increase business because such building is intelligent, honest and good in every respect. Such policies seem to be a natural birthright of Mr. Honeywell, so he has had to pretend nothing—only to work unceasingly under the guidance of head and conscience, and this he has done most faithfully, with such results as we have indicated. He lays down the work for several weeks; he leaves this journal probably four times greater in every respect than when he found it, which means that it is many times four-fold greater in value and in capacity for public service; he will take up the work again in August with renewed strength and resolution that everything thus far accomplished is but a beginning of what can be done in advancing the PACIFIC RURAL PRESS as a force in individual prosperity of producers and in California development.

We also have an enthusiastic word to say for R. E. Hodges, who recently joined our staff as an assistant editor and of whose ability and quality readers are already convinced. Mr. Hodges recently came to California well trained for our kind of work and has made so good in California agricultural affairs that he can offer a home and a vote to an Eastern maiden, from whom, we doubt not, he parted most reluctantly when he decided to follow the westward course of empire. Our most sincere congratulations are offered to both and our rejoicing is that the event will make our editorial staff solidly Benedictine and respectable.

Seventh Edition of "California Fruits."

Another family incident which must go on record is the appearance of the seventh edition of our book: "California Fruits and How to Grow Them." It does not become us to praise it, but we may safely say that it appears this time handsomer and better than it has ever been before—whatever that was. As the type was entirely re-set, there was no economic reason for sparing, either in cutting out or in putting in, and so we have knocked the contents about as much as we could find time for, with the idea of presenting various changes in method in their proper relations to the older

practices. Statistical data are brought down to the latest periods and illustrations re-chosen to present more significant instances, so far as available. Mechanically, the work is more creditable than that of recent editions, and the book as a whole will be found, we hope, acceptable as a token of California progress in technical publication. As this edition brings the work to the close of its nineteenth thousand, it can probably claim to be the most widely patronized of any California book of the technical class, and by its popularity in distant lands, whose climates justify men in imitating California materials and methods, it may also claim to be the most widely known technical book of California. If anyone buys the book for these reasons and can prove the facts otherwise, he can have his money back; and for the benefit of anyone who desires to make this experiment we are really required to state that the price is \$3 per copy, from the office of this journal.

Satan and Idle Hands.

The general review of the Fruit Growers' Convention, which appears on other pages of this issue, shows in outline how resolutely the fruit growers oppose the arbitrary and universal eight-hour day which an initiative amendment to the constitution proposes to enact at the November election. We shall present in later issues specific arraignments of this proposition which were brought forward at the sessions of the Davis convention. It seems clear now that the people of the State will be given full understanding of the matter, although the common newspapers seem to be so timid in the discussion of it. It is probably as dangerous to them as it is to political candidates, and for about the same reasons, probably.

Apart from the reasons which are naturally most prominently urged against the enforced idleness which a universal eight-hour day would achieve, viz.: those of injury to producing industries and the general food supply, there is another line of injury which should not be overlooked. One might get the idea from the discussion that benefit to the workers themselves is conceded. This, however, is not true. The destruction of "overtime" allowances and the limitation of "piece-work" are both against the desires and interests of the wage-worker, and there are many other injuries threatened upon him. A fact which cropped out in Oakland recently suggests one of them. It seems that the Oakland police, working to suppress gambling under the city ordinance, found that after closing the various sheels and running the black-legs out of town, as they supposed, some of these scalawag's had taken to skinning workmen, whose day closes at 4:30, by getting them into "shooting craps" in vacant lots near the buildings they were working on. The published account is that workmen were so misled by these gambling devils that sometimes they pursued the game with lanterns far into the night, and were therefore not only robbed but unfitted for work the following day. It is simply a new demonstration of the old saying: "Satan finds some mischief still for idle hands to do." Theoretically, it is a great idea that the wage earner should have time for rest, wholesome recreation and doing desirable things for himself, but practically it is the wisdom of the ages that idleness is not beneficent and that enforced idleness is a great social danger. It is

probably true that enforced idleness on the farm would be a greater menace to law and order than in the town. At any rate, whatever there is of it on the farm will make the land the less desirable as a residence for the farmer's family—not to speak of his own perpetual vexation and discomfort. Of course if the workman were married and had his own plot of land, there would be a chance for him to use time for the comfort of himself and those dependent upon him, but that is a condition of things so rare as to count nothing against the menace both to employers and the wage-earners themselves from the jobs which Satan has for idle hands.

A State Department of Agriculture.

Another matter projected upon public attention by the Davis convention is the correlation and concentration of the State work for agriculture under one head—a man who might be called, perhaps, State Commissioner of Agriculture and have under him heads of divisions of horticulture, forestry, veterinary, dairy, viticulture and whatever else the State does for the promotion of farming—including the holding of fairs and expositions. We understand that the convention proceeded so far with the proposition as to request Judge Shields to prepare a draft of a bill to be presented to the next legislature with an idea of accomplishing the purpose in view. Such legislation would probably command wide approval because of the general conviction that the present method of special commissions cost too much money, involves too much duplication of effort and is, on the whole, cumbersome and inefficient. We are not at all sure that the new arrangement will do the things that need to be done for the various interests. There is too much danger that we may have what seems to be a great institution for agriculture and cost a lot of money and yet be only great and useful in the name of it. It may do a lot of showy things which may please the general public and yet not get down to many small things which special producers may need for guidance in work or for protection of their interests. Still it may be possible, and Judge Shields can work it out if anyone can. It must, however, be always remembered that California is a very large State, and not only that, but a State of more special lines of production which are great in themselves than any other State in the Union. For these reasons, one must be careful in choosing as a model another State which may have very large agriculture, but of a much simpler kind, or, at least, of fewer kinds. It seems to us that our trouble hitherto has not been in having too many special efforts, but in having them not properly defined, and in sometimes getting them into the hands of men who had no idea of the relation of things, and therefore grabbed at everything in sight as belonging to their prerogatives. It may need a general manager to prevent this, and a good statute for him to work under. Before that can be drawn, it seems to us that a clear idea must be formed of the function of the State government in this connection. Our own present notion is that it should be almost exclusively executive in its character—to see that the people understand the laws relating to agriculture and enforce them and, of course, to help the legislature improve and add to the laws, as circumstances may require. Matters of instruction in agriculture belong to the Col-

lege of Agriculture and the Department of Public Instruction; matters of research belong to the Experiment Station; meetings for public instruction of adults in agriculture belong to the Extension Division of the College of Agriculture; meetings for promoting the understanding and observation of laws for protection, prevention, etc., should be held by the State Department, and all that. We do not mention this as a scheme, but simply as a suggestion that work should be analyzed and classified according to purposes and give to each constituted agency its proper work. There ought to be, of course, the fullest co-operation in such efforts as there would be with right-minded men, but no man should be allowed to range out into the field of others because of his desire to make a great show in the public eye. The laws allow this now, because the men who wished to use the grand-stand wrote the laws to suit the purpose. It is certainly time the whole body of State legislation on agricultural protection and promotion should be recast, if not re-written, and if Judge Shields can do it under the organization of a general State department of agriculture, it will be a great public service.

Paternalism Promotes Enterprise.

Some of us have feared that paternalism in distribution of products might too far discourage private enterprise, but it seems to be working just the other way. The express companies which fought parcels post to the last ditch thought at first they would die in the ditch, but they seem to have decided that there is after all a life for them which is not only worth living but worth fighting for some more along a different line of warfare. They are throwing over their large patrons and seeking the patronage of small ones against whose interests they were formerly largely operated. They have forsaken the idea of being martyrs on Uncle Sam's hands and are planning to beat the old gentleman at his own game—that of cheapening traffic to small operators, both producers and consumers. An instance of this is the establishment of an order and food products bureau by the Adams Express Company. The company will promote more intimate relations between the producer or dealer and the consumer, and create a market for food products that, in the ordinary complicated and cumbersome system of handling commodities, frequently means a loss to the grower and entails unnecessary high costs to the ultimate buyer. The company will dispose of fruits, berries, butter, eggs, poultry, fish, meats and other food articles at a minimum of expense to seller and buyer, delivering the commodities to the buyer's door and the money to the seller without any intervening agency. The rate is to be 25 per cent below the commercial rate fixed by the Interstate Commerce Commission and is no higher than parcel post charges.

Queries and Replies.

Querists must submit full names and addresses.

High Planting and Wound-Painting.

To the Editor: I am planting some trees on myrobalan root, hoping it may be resistant to root rot. Would it be wise in planting to have the bud-scar 2 to 4 inches above ground, as I find the most of our troubles occur at the union of the bud? As we often graft or bud

older trees many feet from the ground, this plan seemed feasible and would bring the more tender plant stock more out of reach of rot and borers. We have always planted the bud level with the ground and hesitate to do otherwise, so ask your advice. I notice frequently in the RURAL PRESS that orchardists are told to cover cuts on trees with white lead and oil. Many years ago I tried it and found that wherever I applied it I killed the bark. Some said it was the oil and some said the lead did it. I used it in orchards several miles apart and the same result.—K. C. P., San Jose.

If you plant on low, retentive soil it will do to raise the trees out of the ground if you can do it without bringing the main roots too near the surface for cultivation. On light, leachy soils it would be very bad practice. As a rule, the transplanted tree should be set about as it grew before. If you want, stem and root alike, you should bud higher. If you have land which requires planting of deciduous trees as late as this, it would be a question whether it is suited to planting at all.

As for the paint, it must be mixed thick so that it will not run. The oil running down is always apt to kill the bark, though it may not always do it.

Apple Leaf Aphis.

To the Editor: J. W. B. has bearing apple trees. Some leaves are all right, others are curled up and drying. There are some insects on the under side and lady-bugs working. The fruit is dropping. I examined and found eggs had been laid in the blossom end and worms developed. I diagnosed as codlin moth and told him he should have sprayed early.—K., Oakdale.

Your advice was right, but there is no relation between the aphis on the leaves and the worm in the fruit, and the same treatment will not do for both. The codlin moth is hit by an arsenical spray chiefly directed at the fruit clusters. The aphis is killed by soap, tobacco or oil emulsion thrown with good force on the under sides of the leaves. It is particularly desirable to be early in spraying for the aphis.

Some Depraved Lady-Birds.

To the Editor: Some bugs which I think are lady-birds are eating ripe cherries in my orchard. They have red backs with twelve black spots. Someone said they were diabtroticas, but I understood the latter to be green. Is there any remedy?—A. H. B. Oakdale.

Sometimes a lady-bird will be just as bad as a boy, and steal fruit. It has more sense than a boy, though, for it will let the fruit get ripe. There is no remedy known to us except that spanking would do a bug as much good as it does a boy. You have to make the best of it and think how hungry for cherries you would be yourself after chewing plant lice for a month. Your distinction between diabtrotica and lady-bird is correct.

Rose Rust.

To the Editor: I enclose some leaves from my roses. They are well cared for and have always been thrifty until very recently. Now the leaves are dropping off of the one the worst affected and it is beginning on others. We value your paper very highly.—W. O. C., Ceres.

It is "rose rust"—an orange-colored fungus growing on the under sides of the leaves. It chiefly infests the hybrid perpetuals, and for that reason some growers reject them for tea roses, which are not stricken by this fungus. The remedy is Bordeaux mixture as soon as you see the first sign of the disease.

FORTY-FOURTH CALIFORNIA STATE FRUIT GROWERS' CONVENTION.

(Continued From Page 661.)

VALUE TO EXPERIENCED GROWERS.—Even so experienced a pear grower as Howard Reed of Yuba City made a remark of similar tenor to many others from other experts in their lines: "That paper gave me several good ideas. I've been fighting pear blight for nine years and I'll continue to fight it as long as I raise pears. But I'm going to have no more manure piles around my ranch exposed to flies. I'll have no more fly-breeding places. I never realized fully the perniciousness of the house fly outdoors in spreading pear blight."

ATTENDANCE.—Practically every meeting was attended by 20 to 200 specially interested people. On Tuesday, about 3 o'clock, the omnipresent Prof. W. T. Clarke announced at the codling-moth meeting that he had just counted the folks at the different meetings. There were 804, but only 248 registered. "Please register." At the same time next day there were nearly a thousand. Attendance fell off Thursday, though the program was packed full of good things. The evening meetings held in the stock-judging pavilion drew several hundred every night.

Owing to the regretted inability of the writer to attend more than three of the meetings at the same hour, the notes that follow are somewhat scattered. Various papers presented at the convention appear in following pages in more or less extracted form. Not all the papers were available; Many of the lectures were given extemporaneously or from notes. Many just as good as those reported here will not be mentioned, solely because they could not all be heard at once.

CO-OPERATIVE MARKETING.—However much or little acreage a grower in the California Fruit Growers' Exchange has, he is entitled to one vote and no more. Many in Pomona and Alhambra own just a few orange trees in their back yards, yet have the same vote as the largest grower. Yet G. Harold Powell says that system has worked satisfactorily for ten years and he ought to know, being at the head of this, the "most extensive co-operative non-profit rural organization" in the United States, one which handles and markets \$20,000,000 worth of fruit annually.

Dean Hunt cited the successful operation of Iowa creameries on the one-man-one-vote system, and the numerous failures he has observed where voting power was based on amount of stock owned or of produce shipped or of acres grown.

The California Almond Growers provided for the big grower who fears combination of smaller growers against him, by making possible a tonnage vote when called for by three or more members. In the three years since the Almond Growers organized, and in the one year since the Cured Fruit Exchange organized, the tonnage vote has never been called for.

The Almond Growers bucked a hard combination at the start, when competing buyers offered more than the Exchange could get for its members' almonds. Some of these members have said since that the only reason they did not sell at the higher prices was the penalty clause in their con-

tracts of membership in the Exchange. This penalty is a \$100 fine for every ton any member might sell outside.

Mr. Powell called attention to the fact that penalty clauses in co-operative organizations are always held by the courts to be in restraint of trade, and therefore illegal. This trouble is avoided by using a "liquidated damage clause," which the courts uphold. It provides that a seceding member shall pay an amount equal to the damage suffered by the association on account of his withdrawal. Any clause which operates to force a man to sell at a set price or prevents him from selling to the highest bidder is likely to be discountenanced in the courts.

A fine which is legal, however, is mentioned by E. H. Shepard, editor of Better Fruits, Hood River, Oregon, and manager of the Hood River apple organization.

Every box packed under their label has a distinguishing mark for each grower, and it must be packed and labeled strictly according to rules. Col. Irish told of being in the grocery store where he buys apples when a man asked permission to empty several boxes of Oregon Spitzenbergs. Having repacked them, he told the grocer that he was a traveling inspector for the organization; and if one imperfect apple had been found, the grower would have been fined \$200 and prevented from shipping for the rest of that season. The fine is collectable by taking part of the deposit required in taking membership.

PEAR BLIGHT.—While most of the State this year is suffering only mildly from pear blight, it is serious along the river, in spite of earnest efforts to cut it out. E. A. Gammon has two men busy all the time and has it well under control. Some of his neighbors have lost acres.

Ants, codling moths, tussock moths, aphids and other wingless insects are potent spreaders of the germs of this disease. Feeding on the sweet gummy exudate at the hold-over spots on the trunk, or picking up some of the germs on twigs allowed to lie on the ground, they crawl up the tree to the tender growing buds and blossoms, shortly after which blight appears. These facts, mentioned by B. J. Jones of Maxwell in addition to his observation that houseflies are transmitters of infection, led to the suggestion of banding the trees as for codling moth to keep ground insects off. Some Rogue River orchards reported to Prof. Jackson of Corvallis, tried this last year with a large percentage of prevention over neighboring trees unbanded.

Scattering belated pear blossoms throughout the season are fertile sources of infection. One authority believed such blossoms are peculiarly susceptible, while another pointed out that this is true only because such blossoms attract so many more insects per blossom because of their scarcity. They should be diligently pruned out before insects can get to them.

All infected blossoms secrete a milky, sticky exudate for some time before they die, which, though not liked so well by some insects, is nevertheless fed upon by them, including bees.

Twigs, too, which are blackened are past the period of most virulent danger as a source of infection.

Eradication is a matter of cutting it out, bark, wood, twigs and all, but especially of cutting out the spots on

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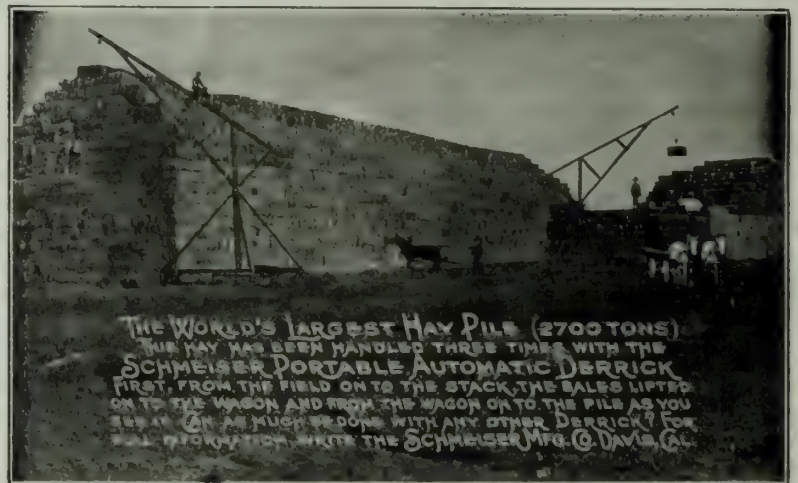
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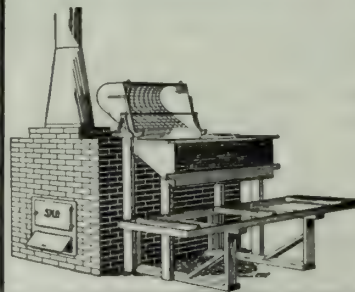
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main limbs where it holds over winter, always disinfecting the tools after every cut. Disinfection is easiest with a sponge moistened in 1 to 1000 corrosive sublimate solution.

Pear blight is regarded as a community problem in Oregon, where, according to Prof. Jackson, it is serious in a number of sections. In Rogue River valley last year it was so serious on the Spitzenbergs that the farmers awoke, got a county appropriation to fight it, and put a few men to work on it late in the season. This spring a county agent was hired who went after the people right, used the State law on some of the wilful offenders, and now has blight well under control.

OAK-ROOT FUNGUS.—The oak fungus is widespread over the State, killing all kinds of orchard trees, peaches especially, pears least, slowly but irresistibly in enlarging circles from infected spots. It is almost entirely in the roots; and while carbon bisulfide applied strong enough will kill anything, its use on oak fungus is unsatisfactory because even though the roots may be killed, the fungus threads inside the wood live on for years unless the bisulfide penetrates them.

The fungus is easily recognized by cutting through the root bark, as a cottony layer with a distinctive toadstool smell. It spreads via tree-roots almost entirely, pushing out rhizomorphs of its own which look like ordinary roots as large as $\frac{1}{4}$ inch in diameter. These may be sent out through the soil in diameter. These may be sent out through the soil a few inches a year; but the only serious way the fungus spreads is by being reached by the growing roots of healthy trees. In most kinds of fruit, a healthy root is attacked as readily as a rotten or injured one; though the fungus lives and grows for years in dead roots.

The most practical way of control, as worked out by Prof. W. T. Horne in the orange groves of Fair Oaks principally, is to make a detailed map of the orchard, using symbols to designate the condition of each tree. Then dig a ditch as wide as necessary to work in, but not less than 2 feet and as deep as roots are found, entirely around the infected area, examining with the unaided eye, every root that is cut, to be sure no fungus is left outside. Throw all pieces of roots into a pile so they certainly will not be returned to the ditch when the dirt is thrown back in or they may bridge the gap. Throw the rootless dirt back in, keeping an accurate detailed map of the ditch as it may be dug out again every two years to cut off healthy roots that will have grown into infected areas; for roots spread far beyond the spread of the limbs.

Building paper of various kinds has been used to line the ditches before refilling, to turn healthy roots away, but they just perforate the paper and rejoice on the way to the dangerous and forbidden grounds.

APRICOT SHOT-HOLE TROUBLE.—This is no fungus at all, according to W. S. Ballard of U. S. D. A. and T. F. Hunt of the University of California. Both have carried on similar spraying experiments in which as many as seven sprays per season have been given, and the fruits literally coated with bordeaux. The characteristic red scabby blisters developed under the thick coat of spray material, but always on the side of the apricot exposed most to sunlight and on those not so much protected by leaves. Microscopic examinations, hundreds of them, have failed

to reveal a fungus or bacterium which might cause the trouble. Therefore it is thought to be physiological, and avoidable by proper cultural conditions. Crude oil or distillate sprays seem by the stimulation they give the tree to overcome the shot-hole trouble. This has been observed especially in several orchards of the Watsonville district and elsewhere. The Bordeaux spray only aggravates the spots made by the shot-hole trouble, and several growers testified that they had cleaner fruit by not spraying.

STANDARDIZED PACKING.—Packing and marketing were treated from all the angles of the compass for citrus and deciduous fruits, locally, and distant, fresh and canned or dried. In every case uniform standards for the State, and better still, for the nation, were desired, but were found hard to obtain because the grower who breaks the standardizing agreement is the one who makes a pile of money and spoils the market for those who hold to the standards. This is especially true of the grape shippers who are still trying to establish a minimum

The U. S. Department of Agriculture is working to find satisfactory standards for oranges and other fruits, and until these standards are established, but little can be done. When they are discovered and proved satisfactory to producer and consumer, the leading co-operative market man in the United States declares that no force except the well enforced arm of law will ever succeed in holding the growers to those standards, especially in regard to shipment of immature fruit.

A hope is held out that the standardization will be greatly stimulated by profitable utilization of by-products. Men do not want to cull out soft or slightly disfigured fruit unless they can use it profitably. The making of fruit syrups is one of the many by-product uses that will be developed and which in many cases will make the sole profit for the orchard.

TALKS TO NEW SETTLERS.—A course of lectures running through the week, given by Dean T. F. Hunt of the College of Agriculture, for information of new settlers, was one of the commonest topics of conversation on the grounds. Advice was given, supported by experience and figures which if carefully followed would save prospective farmer settlers from the multitude of woes to which the tenderfoot is heir.

Of all subjects which stirred up earnest, vigorous concern and arm-waving oratory, the proposed 8-hour amendment took the lead.

At an early mass-meeting of the convention, a committee of seven was appointed to draw up a plan of defense, after numerous leading farmers had expressed the ruin which seems to face the industry of food production.

F. B. McKevitt of Vacaville was made chairman, and G. H. Hecke of Woodland temporary secretary. That afternoon they presented the plan of organizing a Farmers' Protective League to cover northern California, leaving the southern campaign in the hands of the Citrus Protective League. It is proposed to organize a committee in each county to visit every registered voter, beginning at once, and to see that everyone shall be shown why he should vote against the proposition.

For the farmers it means operating only what each family can care for, discharging white farm labor and

leasing to Oriental partnerships who will work whatever hours are necessary to produce and harvest the crops. The large families of the foreigners will also have the advantage in this way over Americans.

A. R. Galloway spoke of tons of berries lost in Sonoma county last year because pickers were absolutely unobtainable. An apricot grower told of the same trouble. Fruit ripens overnight, and when long hours are not sufficient with all available labor to save the crop, shorter hours will make still greater loss. No man or woman may be even permitted to work over eight hours in a day or forty-eight hours in a week.

Stock and dairymen of course will be hard hit the year around, for the forty-eight hours must be spread over seven days, and the milkings should come at reasonably uniform intervals. The hope of the farmers' victory lies largely in calling to the attention of thinking labor union men the facts

that white farm labor will suffer, that the cost of food and clothes production will increase over the already high cost of city living, for the labor part of the farming industry is the perennial expensive cost, city laborers' wages will not go so far, and all overtime work will be absolutely abolished, in cities as well as in country.

This being an initiative amendment to the constitution, it may be adopted by a bare majority of those voting. It can never be repealed except by another initiative requiring a two-thirds majority.

The afternoon meeting at the convention was adjourned till next morning, Thursday, when everything on the program gave way to the eight-hour meeting. Various phases of the injury to agriculture and labor were discussed, unanimously condemning the measure as being unable to accomplish what is desired by labor and as being a certain ruin to white American agriculture.

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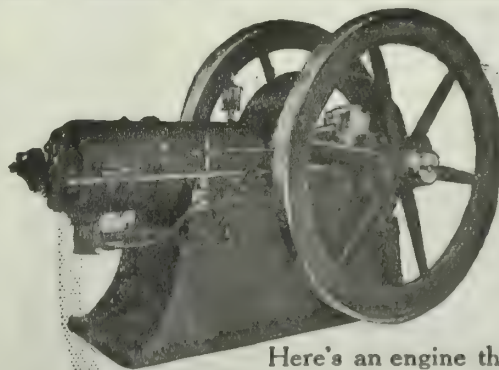
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Mediterranean Fruit Fly.

Anyone who attempts after May 1, to bring into the United States certain Hawaiian fruits, nuts, and vegetables will face a penalty of \$500, fine or imprisonment for a year or both. A new order issued by the Department of Agriculture provides this punishment for attempts to violate the quarantine declared in 1912, under the Plants Quarantine Act, against Hawaiian products which might introduce into the United States two dangerous pests, the melon fly and the Mediterranean fruit fly. Under the new regulations importations of bananas and pineapples are permitted under stringent conditions of inspection and certification. Practically all other fruits and such vegetables as tomatoes, squashes, green peppers, and string beans are absolutely excluded.

Hitherto the United States has fortunately been free from both the melon fly and the Mediterranean fruit fly. The latter in particular has proved a source of great loss, practically putting an end to the fruit industry wherever it has obtained a good foothold. The Bermuda peach crop, for instance, is now a thing of the past. The fly is believed to have originated on the west coast of Africa, its name being due to the great damage it did after it had been carried to the Mediterranean. It also spread to Bermuda, South Africa, Australia, and New Zealand, whence it was carried in ships' cargoes to Hawaii. In all probability the fly would be in California today if it were not for the fact that no fruit is grown in the immediate vicinity of San Francisco.

FLEAS ATTRACT ATTENTION

To the Editor: For fleas in yards and buildings (not dwelling houses) spray crude carbolic acid and distillate. In the yards, stir the dust as you spray. This is good for hog lice, too.—A. B. T., Gilroy.

To the Editor: I have tried moth balls for fleas and could not see the slightest effect on the fleas though I came near getting a licking from my wife for stowing some in the bedroom in an effort to scare them out so I could sleep.

I found the dog loaded with them, so I put a number in his bed, which is a barrel sawed off, with some barley sacks and straw in the bottom. The fleas moved—whenever the dog did, so I decided on something else. At the drug store I found some Buhach flea powder, and filled the dog's hair with this, and I could see the fleas die. It was ten days or more before I found another flea on the dog.

I filled the dog's bed, sprinkled the rugs, carpets and baseboards in the bedrooms. We began to get relief at once, but it was necessary to catch a good many. I was not very successful at this however, being too slow on foot I suppose.

The party having fleas in the barn might run a drove of dogs through, and then turn them over to the poundman or kill the fleas with insect powder.

There are two styles of fleas here, one the kind above referred to, are large robust, broad gauge fellows that hop like a grasshopper, and in the quiet hours of the night go marching about one's anatomy, clawing, chewing, and biting the bark as they proceed. The other is a tiny, narrow

gauge sort of bantam flea; having somewhat similar characteristics except he seldom hops, and has a habit of gathering in clusters and fastening onto his victim and hanging on with the tenacity of a bull dog. I have seen half the individuals in a cluster hang on 24 hours after they were dead. I have heard these little fellows called squirrel flea, and chicken fleas, and they do not bother in the house much.

Last summer we had a visitation of these little fellows in the poultry yard, and they gathered on the chickens heads. We doped them with nearly everything, but finally found that lard or axle grease mixed with chrysolium sheep dip smeared on them would fix them. They would change from a chocolate brown to a black when they were dead. This spring I found them on the dog around his eyes and ears, and Buhach did the business for them in short order. Buhach must be bought fresh often as it soon loses strength if exposed to the air. A good bit of it sold by stores is either adulterated or has lost its strength.

A man that had been employed by the Buhach people told me that they sometimes cut too much stem with the flower, which gave a greenish tint to the powder, and it was then inferior to the yellow colored product.

I think that dogs and cats have much to do with this flea business. I notice that each time the family dog takes a turn digging after squirrels or gophers there seems to be a

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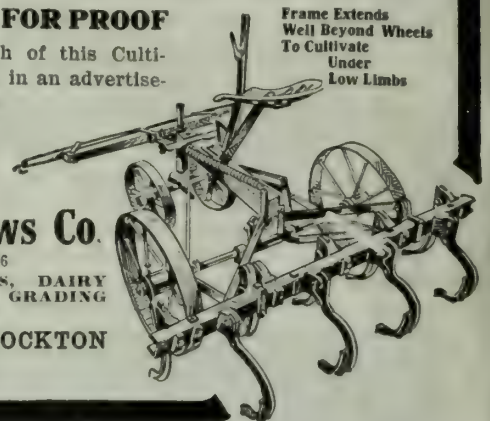
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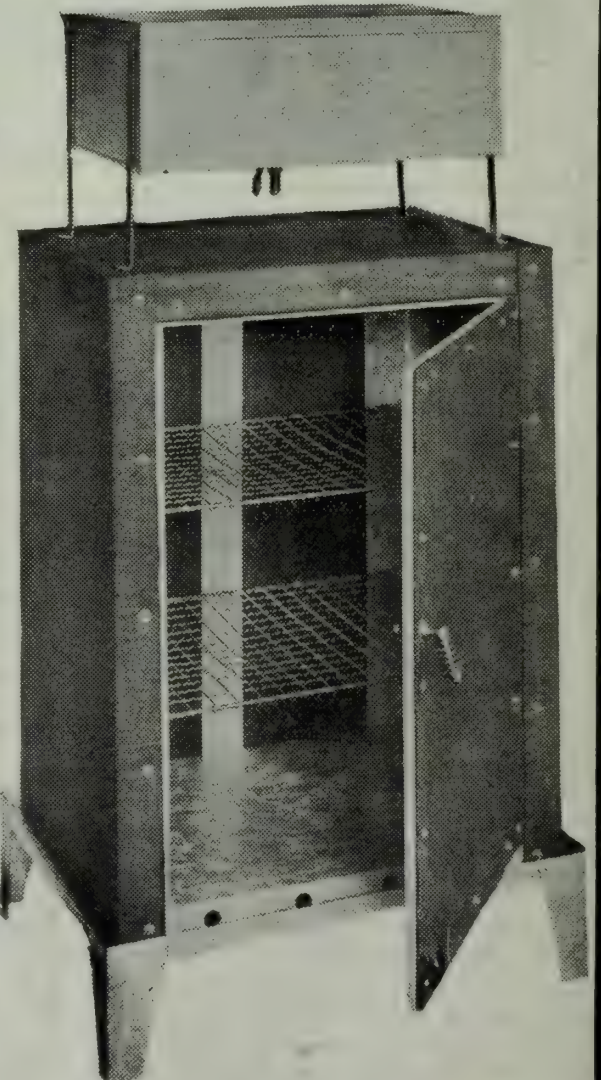
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DUAL PURPOSE TRACTORS.

[Written for the PACIFIC RURAL PRESS.]

That the uses to which tractors may be put are many and varied, was recently demonstrated on a 2000 acre ranch that was under development in Kern county.

At the start two tractors were purchased to furnish power for the breaking of a heavy bermuda grass sod

that covered the entire ranch. It was found that in this respect the mechanical power was much more economical than horsepower, but in leveling and checking the land for alfalfa, mules were used.

The tractors' serviceability did not end with the plowing, however, for almost daily other work was found for which they could be profitable used. One of these was furnishing power to grind feeds and run the silage cutter, both of which required a large amount of power, and would otherwise have required an extra investment in engines or motors.

The real value of the tractor was apparent, when they were put to hauling to and from Bakersfield for, located 10 miles away as it is, an entire day was taken to make the round trip; and when a heavy load was to be hauled it required at least a four-mule

team and oftentimes a six-mule team. The labor item by this system was also a big factor, but that has all been done away with now, for five wagons are coupled together behind the tractor. The trip to town and back requires less time and only one or two men are required to make the trip. Everything imaginable is hauled in

this way, even hogs which are fattened in carload lots and hauled to town by the carload in this manner.

Run as they are on cheap oils, there seems to be little doubt but what the tractor will eventually do a large part of the work that was formerly done by horses and mules, especially on large ranches.

CLASSIFIED ADVERTISEMENTS.

Rate 3c per word. No orders for less than 25c per week. If you have anything to sell, or want anything, use these columns.

TREES AND NURSERY STOCK.

FOR SALE—Peach, apricot, plum, prune, fig, apple, pear, and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants; elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRINK & KOHMAN, Nurserymen, Box 1212, Fresno, Cal.

BURBANK'S SPINELESS CACTUS. We are offering for immediate delivery the improved forage and fruiting varieties Burbank cactus. We guarantee all plants true to name. A liberal discount on orders for 1000 leaves. Send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or Jesse I. Jewell, Mgr., Santa Rosa, Cal.

FOR SALE—Burbank Spineless Cactus cuttings, "Chico," Monterey, "Santa Rosa" and "Fresno" varieties, assorted \$15 per 100 slabs; 25c each in smaller lots. Send your orders to DARROW-WINCHESTER CO., 1605 Telegraph Ave., Oakland, Cal.

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SPINELESS CACTUS—Six fruiting and six forage varieties (12 plants) for \$5. All Burbank productions, introduced 1911-1912. Special prices on lots of 100 to 1000 slabs. J. T. GREEN, Box 63, Morganhill, Cal.

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AVOCADOS—Seedlings, 3 to 8 ft 60c to \$1. Budded trees, \$3. All field grown. Discount on quantities. Magnolia Nursery, Whittier.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside Cal.

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VICTORIA, AUSTRALIA WANTS SETTLERS

Special inducements; government land, railways; free schools; cheap irrigation; 31 years to pay for farms adapted to alfalfa, corn, grains, fruit, etc.; climate like California; ample markets; reduced passages; special excursion next November. Free particular large form F. T. A. FRICKE, Government Representative from Victoria, 687 Market St., San Francisco, Cal.; Box W.

20 ACRES subirrigated land, 3 1/2 miles from Modesto in Wood's Colony; 8 acres bearing assorted fruit, 1 acre Thompson's Seedless grapes, 11 acres alfalfa; good improvements. \$300 per acre; terms. ALVIN BROOKS, R. 5, Modesto, Cal.

MOUNTAIN RANCH, fully equipped, near S. F. county road, and creek through ranch; good house, modern plumbing. Owner leaving state. Party with herd of pure-bred cattle can have equivalent share of ranch, full control. Box 20, Pacific Rural Press.

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8-ACRE RANCH; 4 acres young prunes, 50 chicken houses; ideal situation; good house and outbuildings; \$6000. F. PETRAY, Healdsburg.

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WANTED TO BUY about 20-acre ALFALFA RANCH, or first-class ALFALFA LAND. Bargain only considered. Give full description; state lowest price. Am no agent. Ranch wanted for home. Box 12, Pacific Rural Press.

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FOR SALE—Powers well boring outfit, 350 foot equipment. Cash or terms. Would consider renting on shares. C. L. FOSTER, Masonic Bldg., Oakland.

TO EXCHANGE—Five passenger automobile for pumping outfit. Write P. KLEIN, JR., Rio Linda P. O., Sacramento County, Cal.

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This well is on the property of A. H. Coates, a farmer at Dairyland. At a depth of 230 feet an artesian flow was struck which has a most wonderful pressure. Over 17 feet of pipe was placed above the ground to avoid unnecessary flow, but still some water comes over the top. Mr. Coates has but to turn a stop-valve to irrigate his entire farm of 80 acres at no cost for water or power. This is but one of the 39 artesian wells at

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Stine & Kendrick, 23 Montgomery St., S. F.

Gentlemen: Please send (without obligation to me) descriptive and illustrated literature on "Dairyland Farms." I am interested in the crops as checked below (X) and would like your special Bulletin on the subject.

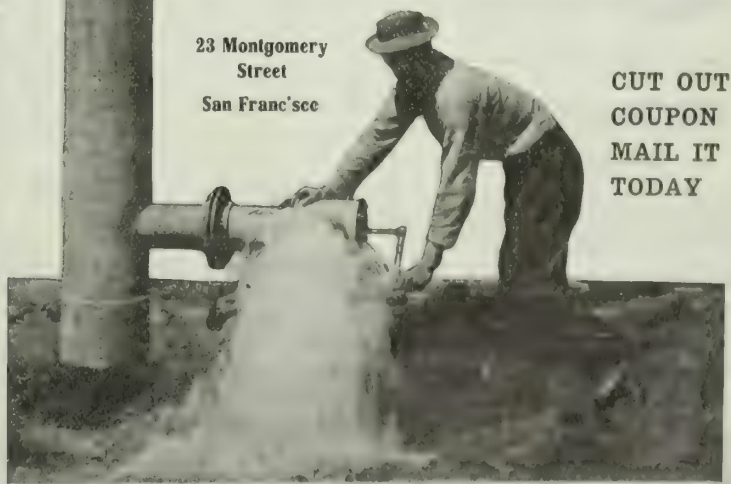
Alfalfa	Melons	Peaches
Dairying	Sweet Potatoes	Grapes
Hogs	Tomatoes	Figs

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Town State.....
Send me price and terms on acres. PRP

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OSCAR DUNTON, San Francisco, Cal.

Washing Oranges.

DECAY INCREASED BY WASHING.—The washing experiments carried on by the Bureau include the work of 13 different types of machines, operated in 32 packing houses. The carefully handled oranges, not washed, showed 1 per cent of decay after two weeks; the washed, 4.1 per cent. Fruit handled under commercial conditions and not washed showed 3.6 per cent of decay; the washed fruit 10.2 per cent.

The results of the Bureau investigations clearly show that decay in the packed fruit is largely due to injuries received or aggravated during the operations of washing and drying, although it is difficult, if not impossible, to indicate any particular point at which most of the injury takes place. The Florida experiments show that where injuries to the fruit were confined almost wholly to those received in the commercial field-handling operations the decay was practically the same as in the case of lots where injuries were confined to those received in the washing and drying operations. From this the assumption may be drawn that the bad effects following washing are due not so much to the actual injuries made in passing the fruit through the machine as to the inoculation of injured and bruised spots through the agency of dirty, infected water.

Fruit which is covered with sooty mold must be thoroughly soaked before it is in proper condition for washing. This introduces a prolific source of infection—the soaking tank. Unless the water in the soaking tank is kept sanitary by being frequently changed, it soon becomes heavily charged with blue-mold spores, and is then one of the most dangerous fea-

tures of the washing operations. As yet no disinfectant has been found which proves effective against blue-mold.

While the fruit may be washed with little or no injury if the water is clean and the fruit has been carefully handled, under commercial handling these conditions are not usually realized. The department says:

"Washing is perhaps the severest treatment that can be given to citrus fruits, and wherever it is not absolutely necessary in order to render the fruit marketable it should be omitted.

"Observation has shown that careless manipulation of the best machinery is frequently followed by as serious deterioration of the fruit as the careful handling of less desirable types of machines."

ETTER STRAWBERRIES.

To the Editor: The Etter strawberry plants No. 80, which I got from your new subscription of your PRESS, produce lots of runners and very few berries. I manured a piece of ground last November, plowed it and planted 500 berry plants; runners from the 12 you sent me. The old plants have only a few berries on. Now what can I do to get berries next year, shall I cut the tops off the plants. I picked strawberries in Hood River, Oregon one year, and the man I worked for told me that they take a sharp hoe and cut the tops off the plants as soon as the picking is done. Is that correct?—C. R., Orland.

Replying to C. R., of Orland, I will say he has most likely treated his plants too well—too much water and too much manure. He got an enormous growth of runners and little inclination to fruit. He should keep the runners cut and build up a lot of crowns on the plants, and regulate the growth by cultivation. I don't believe Ettersburg No. 80 will stand as much moisture and fertilizers as many of the regular sorts, but I do know that with soil too poor and moisture too scant to grow the ordinary varieties, these hybrids will grow wild and produce lots of berries. Really they are too robust to stand the petting some people would give them. I would not think of cutting the tops off the plants. Pretty soon I will have varieties so fruitful that they can't be spoiled by petting, and still robust and strong.

ALBERT T. ETTER.

Briceland.

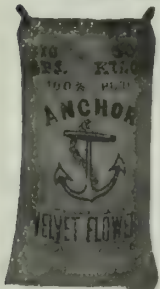
GRAFTING OVER WINE GRAPES.

To the Editor: Some of my neighbors are anxious to know whether wine grapes can easily be grafted or budded into raisin or table grapes. Would like your advice and experience.—J. W. W., Modesto.

[If the vines are strong and thrifty, wine grapes may be successfully grafted to table or raisin varieties in February, March, or April. Full explanations of methods are given in the PACIFIC RURAL PRESS of March 21, 1912, and a circular on the subject may be had from the University. If well done and frost does not follow, you may expect 95% of a stand. You cut the entire vine off an inch or two below the surface of the ground. One full crop will be lost, and a half crop next year.—EDITOR.]

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ORANGE SEED

Just received a large shipment of Florida Sour Orange and Grape Fruit Seed. Write for prices

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Circular containing 100 mechanical movements mailed free.

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 Morganhill, Cal.

ROAD ON PRIVATE LAND.

To the Editor: When a public road has been washed out, and the people who use the road, travel on say 75 feet of private property lying parallel to said road, can the people who use the road for travel back and forth claim the 75 feet as part of said road after a certain number of years? If so how long have they got to use the 75 feet as a road before they can claim it as part of the road.—J. G. L., Arroyo Grande.

ANSWERED BY STATE DEPARTMENT OF ENGINEERING.

This is, of course, a question which would have to be finally settled by the Supreme Court. I have, however, taken the matter up with the Deputy Attorney-General, Mr. Jones, and his unofficial opinion coincides with mine, that the people using a portion of the man's land alongside of the county road, which county road was made impassible by means of washouts, and failure on the part of the county to repair the same, could not, in any length of time, acquire title to the land so used. The acquisition of title, or right of way, over private lands, for the purpose of passing from one place to another, was based primarily on the inherent right of every man to have access from public roads to his own property. This has been amplified to such an extent as to make the right dependent on convenient means of access, but it does not seem that the failure of the county to make proper road repairs, nor the kindness of the property owner in allowing the use of a portion of his land, pending repairs by the county, could result in passage of title to those so using the land.

EDWARD GOODWIN,
Road Engineer.

Sacramento.

RIPE SEVILLANO PICKLES.

To the Editor: For many moons it has been the contention among California high-brows that the Sevillano olive grown in California could not be successfully pickled if permitted to reach a condition approaching ripeness. I am sending you a sample of so-called Queen olives processed by the manager of the Maywood Packing Company, which constitutes an answer to the argument of those contending that this particular variety of olive could not be successfully or acceptably prepared for table use. To you, as judge in the case, I submit these olives as my argument and await your decision.—W. A. Woodson, Corning.

[Nothing that we can say can add to the testimony which the fruit carries on its own face, as it were. We hear much about it as we go about the State, the general tenor of the remarks being that the Maywood Sevillano as canned is about the acme of excellence in this new food product which California has given to the world. We believe we are right in calling it new, because we believe no other country is giving the olive to the public in such supremely acceptable form.—EDITOR.]



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THE GRAPE-LEAF HOPPER.

R. M. Roberts, Agricultural Demonstrator, Santa Fe System, Fresno, issues the following:

The eggs of the grape leaf-hopper are laid on the under side of the leaf just beneath the epidermis, and the young hoppers or nymphs, after hatching, live and feed on the under side of the same leaf. A period of 17 to 19 days elapses between the time of hatching and the time that the insect attains wings and has ability to fly. During this period they go through five stages of development, each denoted by a molting of the skin and an additional growth of wing pads. Before attaining wings, the nymphs are susceptible to liquid sprays of various kinds, which kill by contact. The largest number are killed by spraying just before the oldest are able to fly.

To effectively control these pests it is desirable to use a power sprayer with a pressure of 200 to 225 pounds. Two standard nozzles on the end of each spray rod adds greatly to the effectiveness of the work which should be done largely from the under side.

After repeated trial with various mixtures the following has been found to be safe and satisfactory and at least 90 per cent efficient: Whale oil soap (bar or hard form), 5 lbs.; black leaf, 40, 1 pint; water 200 gals. Increase the soap 25 per cent where the soft or liquid form is used. The hard soap must be dissolved in hot water before being used. The percentage of insects killed depends largely upon the thoroughness with which the work of spraying is performed.

If it is desired to control mildew at the same time, Atomic Sulphur paste at the rate of 12 lbs. to each 200 gals. of water or dry sulphur in the desired amount per acre can be added to the above mixture. It is important that an agitator be used in this connection else the sulphur will settle to the bottom of the container.

The cost of this work with a good power spray outfit, should be about \$2.50 to \$3.00 per acre for material and \$1.50 to \$2.00 for labor.

Improved Fruit Pitting Machines



CAPACITY:

APRICOTS, 1 ton per hour.
PEACHES (freestone), 2 tons per hour.

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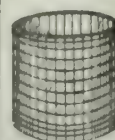
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AGRICULTURAL REVIEW.

Fruit Growers' Convention Notes.

The biggest fruit growers' convention ever held in California, the most comprehensive program of fruit methods and problems, was followed Saturday afternoon at Davis by a general exodus of learned and unlearned, but wiser, men and women from the little town of Davis and the big University Farm that had so hospitably entertained them.

The resolutions committee reported Friday night at a mass meeting, and the following resolutions were unanimously adopted: Thanks were tendered Prof. A. J. Cook and the State Commission of Horticulture, the quarantine; the members of the Yolo county board of trade; the workers of the University and its farm school; members of the U. S. Department of Agriculture; notable men of other States who delivered many of the lectures; and the legislature which votes funds enabling the University and the horticultural commission to carry on their great work for the farmers of California.

By resolution, the legislative committee appointed at a previous session of the convention was requested to prepare a pure seed bill to present to the next legislature and to ask the readjustment of railroad rates on barnyard manure.

Investigation by the College of Agriculture of the causes of the falling of fruit blossoms was recommended. The early publication of the book on California insects now being revised by the Horticultural Commission was urged, and the State Fair bond issue was endorsed. The unexcelled harmony between the organizations and men and women responsible for the tremendous success of the convention was commended.

The next convention will be held the second week in November, the first two days being exclusively for the county horticultural commissioners, at Los Angeles. The second two days will be occupied by the regular convention at the same place. Only one fruit program will be carried through each day, because of the uneasiness manifested at Davis by those who could not hear everything going. But alfalfa growers will have their own program at the same time. Truck growers and walnut growers will also have separate meetings at the same time. On Friday and Saturday of that week, the horticultural commissioners will go to Riverside to attend the regular meeting of the U. S. Department of Agriculture and University of California scientists.

Deciduous Fruits.

Pear blight is said to be bad along the Sacramento river at this time, and all other districts report some blight. Reports from Sutter, San Joaquin, and Contra Costa counties state that canners are paying \$50 per ton, which will largely compensate growers for the shortage of crop.

The apricot crop around Fillmore, Ventura county, is said to be heavy this year, and harvesting will begin about two weeks earlier than usual.

Irrigation has been started by the orchardists of Tehachapi, and many pumps are now running for that reason.

According to reports from Fresno, apricot canning and drying will start

in that section this week. It is not expected that the run on apricots will be very heavy this year. Green fruit buyers are said to have been paying \$35 per ton for apricots in that section.

Army worms are said to have invaded one district, adjacent to Chico, during the past week, and have done considerable damage. T. Walburn is protecting his place from them by

keeping his irrigation ditches full of water.

The peach crop of the Yolo orchard is reported as being heavy this year, although the apricot and prune crops on the orchard are said to be away below normal. The almond crop is a good one.

Reports from Healdsburg are to the effect that the high winds of last week did considerable damage to the prune orchards as well as to the prune crop of that section. Apples and walnuts were also damaged somewhat.

Citrus Fruits.

The June drop of oranges is ascribed by G. W. Waterbury, of Corona, to their death shortly after blooming, due to what seems a usual stagnation of sap flow about that time. Cool weather prevents the activity of nitrifying bacteria, which makes fertilizers available.

G. Harold Powell, manager of the California Fruit Growers' Exchange, expresses no fear but that citrus consumption the next few years will keep

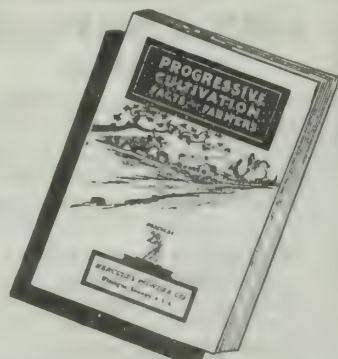
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Chronicle Bldg., San Francisco, Cal.

Please send me a free copy of your book, "Progressive Cultivation." I am interested in dynamite for

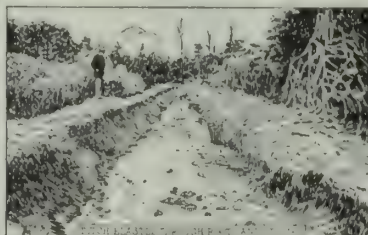


Better Crops

The results that may be obtained by improving soil by the use of dynamite are sometimes almost unbelievable.

The illustration shown above is an accurate copy of a photograph. Half of the field in question was sub-soiled with dynamite. The other half was not. Corn was then planted. On the sub-soiled portion it came up vigorous, strong, growing higher than a man's head. On the other half of the field—the picture tells the story.

This is not an isolated or even unusual case. The same thing has occurred thousands of times in different parts of the country and with crops of various kinds. Has it happened on your farm? "Progressive Cultivation" tells how these results have been obtained. It tells how you may obtain them. Read it.



Time and Labor Saved

Have you ever dug a ditch across overgrown or swampy land, through ground full of rocks, roots, and stumps? If you have you know what it costs in labor and time—when you dig.

When Hercules Dynamite is used there is a different story to tell. Instead of removing every pound of dirt by hand, struggling through underbrush, tugging at roots and stones; a few charges are planted, connections made, the charges fired—and there's your ditch. Finished in minutes instead

of hours, or hours instead of days. Furthermore, it is a better ditch than could ever be dug by hand.

The illustration shows a ditch blasted through land that was heavily overgrown with brush and badly obstructed by stones and roots. Hercules Dynamite simply lifted everything at once. The ditch was finished.

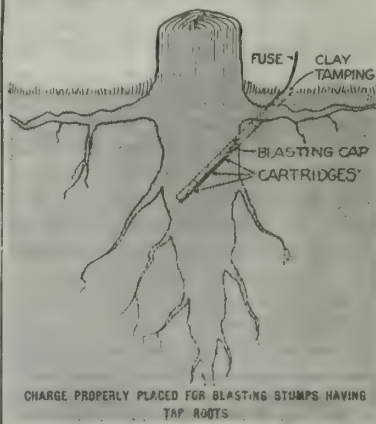
Clearing Land

Hercules Dynamite may be used in several ways to facilitate the clearing of land. It gives invaluable aid in the removal of rocks, stumps, and standing trees. Work that ordinarily would take a gang of men and several horses many days to accomplish can be finished in half the time when dynamite is used.

To accomplish this saving in time and effort, the main requirement is that the man in charge know how to use his dynamite to the best advantage.

Land clearing usually calls for the use of several different methods, each one of them simple in application, valuable only because each serves a particular purpose.

A rock may be removed by use of mud cap, snake hole, or block hole, depending on size and location. Some stumps and trees have tangled spreading roots, others heavy tap roots. The manner in which the charge of dynamite is set and the amount used depends upon the kind of stump or tree to be blasted.

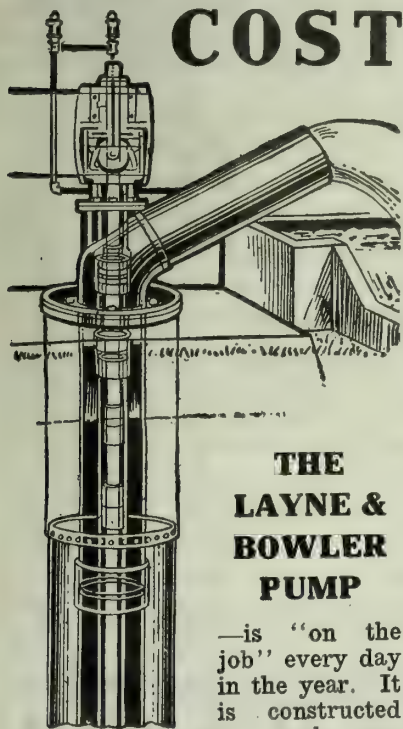


In "Progressive Cultivation" these various methods are fully and accurately described. Every man who takes a real interest in his property should have this book. If you have no copy write for one.

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THE LAYNE & BOWLER PUMP

—is "on the job" every day in the year. It is constructed to work successfully under the most difficult conditions and to always give an efficient and continual service at the lowest cost.

No pit necessary. No stuffing boxes. No mechanism is needed to adjust runners. Few parts. Suction troubles eliminated. Unaffected by sand. Absolutely guaranteed.

Layne Patent Well Screen

This screen increases well production as it has a far greater inlet than ordinary screens. Sand troubles are positively eliminated and the well is made more durable. This screen has achieved wonderful success wherever installed.

pace with the increased production in California, Florida, Porto Rico, etc., because of their opening new markets and increasing consumption in old markets by judicious advertising. About \$200,000 was spent last year in advertising, and no expenditure is more unanimously supported by the growers.

Due to careful selection of fruit and an extra good pack, oranges shipped by the Co-operative Orange Association, of Lindsay, Tulare county, recently, brought an average price of \$3.60 per box on the New York auction market. Considering that this is a comparatively new brand, and that the prices received were about the same as those paid for older and better established brands, it seems that careful grading and packing are well worth the growers' time.

It is estimated that over 200,000 citrus trees will be planted on the Orland irrigation project next season. Some 40,000 fruit trees have been planted out at that place this year.

Counting 800 cars of valencias, which are about all picked, it is estimated that 2800 carloads of citrus fruit will be shipped from Lindsay, Tulare county, this season. The outlook for next year's valencia crop is not so good as for the past year, as the bloom is light, but navels are setting well and a good crop is anticipated.

Navel orange shipments from Riverside are beginning to reach a close, and seedlings and others are beginning to be figured in the shipments. From all over southern California come reports of largely increased shipments over estimates, and the increased prices at the end of the season are having an effect of evening up the returns so that they will be fairly satisfactory for the season.

Walnut News.

The Walnut Growers' Association is selling the meats from light-weight or bad-shelled nuts at 32½c per pound. Eighty per cent of the market price is paid to the grower for all nuts when delivered at the local station.

Carlyle Thorpe expects a State crop of 11,000 tons this year. In spite of the short crop, about as much will be shipped by the Association as last year, because of their added acreage this season and the reduction of firsts' last year by the hot spell. Mr. Thorpe expects the packing houses to close about November 20, as against December 18 last year. Half of the nuts should be marketed before Thanksgiving, the other half before Christmas.

In the forty days preceding June 3, the Walnut Growers' Association added to its membership growers controlling 800 acres.

The demand cannot be supplied for Franquettes and Mayettes at prices much above those of the Placentias.

The budded walnuts last year received a premium of 3 cents a pound over the seedlings.

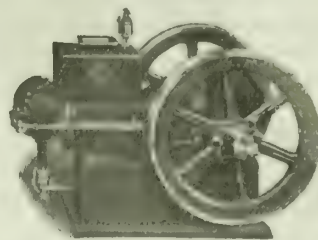
Field Crops.

California rice is as good quality and yields double that of the southern states, according to E. L. Adams, of the U. S. Department of Agriculture, located at Biggs. About 1000 to 1500 pounds is the southern yield. The rice land must be submerged in water from June 15 till late September, when it must be drained for the harvest.

Hay, barley, wheat and beans, in the order named, are the most important field crops of California, according to

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WE MANUFACTURE THE IDEAL GREEN FEED SILO.

Write for silo information.

S. S. Rogers of Davis. New York and Michigan only, lead California in bean production.

Sutter county bean growers in some sections are seriously troubled with weevils and red spiders, which work especially on the bayos and small whites. Dry sulphur spray is proper for the spiders.

Grasshoppers are said to be doing considerable damage to the alfalfa near Hollister, San Benito county, and it is feared that they may later attack the fruit trees and other green things growing in their paths.

Some 20 harvesters are now engaged in harvesting the grain crops, on the west side of San Joaquin county. The grain is ripening very fast in all sections of that county, and it is thought that by the latter part of this week harvesting will be under way in all districts.

It is now thought by W. K. Brown, manager of the Moulton Irrigated Land Co., that the rice on their lands will be harvested eight weeks earlier this year than last, as the season is much earlier.

Vegetable Notes.

Prospects for a good lima bean crop around Moorpark, Ventura county, are said to be very good at this time, and little reseeding has been necessary this year.

Blackeye beans in Los Angeles county are selling at \$7 per hundred pounds.

Three carloads of blackberries were shipped East last week by the Sebastopol Berry Growers' Association. The berries are finding a big demand in many sections.

One hundred and thirty of the boys from the San Francisco Boys' and Girls' Aid Society arrived in Santa

Divide By 2



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Dairy Outfitters

52-58 Clay St., San Francisco

Rosa last week and will soon be busily engaged in picking berries at the Barlow berry fields.

An editor who started about twenty years ago with only fifty-five cents is now worth \$100,000. His accumulation of wealth is owing to his frugality, good habits, strict attention to business, and the fact that an uncle died and left him \$99,999.—Editor and Publisher.

Write today for Illustrated Catalog No. 25. There may be something in it you don't know about irrigation. It's free for the asking.

Layne & Bowler Corporation
900-910 Santa Fe Ave.,
Los Angeles, Cal.

Good and Bad Oranges and Orange Trees.

[By A. D. SHAMEL, of Riverside, at the Fruit Growers' Convention at the University Farm.]

[The illustrated report of A. D. Shamel, of the U. S. Department of Agriculture, working in co-operation with the California Experiment Station, was a striking feature of last week's assembly of fruit-growers at the University Farm. It included detailed accounts of how the work came about, the purposes in view, and the methods adopted. Its publication in full, with copies of all the record blanks employed, will doubtless soon be undertaken as a state document. Our purpose at this moment will be to satisfy the reader concerning the chief features of the undertaking and the specific facts thus far demonstrated, which show clearly that the work is not only of great pomological importance, but that it underlies commercial success with citrus fruits and bids fair to measure the profitability of investments made in citrus-fruit production.—EDITOR.]

THE PURPOSES IN VIEW.—The improvement of citrus fruits by bud selection is a term used in our work to mean the isolation of existing desirable types in established varieties. We are not particularly concerned with the origination of different or new varieties by the selection of bud sports, at this time, although we know that such results are possible from the fact that we have already accomplished this result in the course of our work. Commonly we have been taught to regard the terms plant breeding or plant improvement only in the light of the so-called creation of new varieties by crossing. While not underestimating in any sense the importance of crossing as a means of producing new varieties, we do unhesitatingly and emphatically affirm that the most important problem before fruit-growers is the improvement of established varieties now in existence, making more efficient the production and the quality of the production of the established citrus varieties. This effort to improve citrus varieties might be compared with the conditions in dairying, in which the improvement of dairy breeds and individual cow production of milk and butter-fat through knowledge gained by use of individual cow tests has been so markedly successful with established dairy breeds. The improvement of citrus fruits by bud selection might be compared more closely with similar work now being carried out successfully both experimentally and practically with other vegetatively propagated plants, such as the improvement of potato varieties by hill selection, the development of improved varieties of carnations, ferns, and a constantly growing list of other food or ornamental plants by bud selection based on performance records.

TYPES.—We use the term citrus types to describe groups of trees of a given variety in our established orchards possessing similar important characteristic habits of growth, production, or other fundamental commercial or other characters. The differences between the types is less than the difference between varieties. In other words, we have considered types as offshoots from the variety, retaining certain fundamental varietal charac-

teristics, but differing from the standards of the varieties and from each other in important commercial characteristics. For instance, the fruits of the several types of the Washington navel orange all possess navels, but differ in color, shape, size, texture, quality, time of ripening, and other commercial characters.

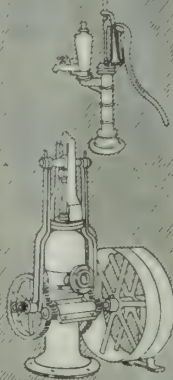
Our discovery of the frequency of the occurrence of diverse types in our established orchards, and their relation to commercial citrus culture is the basis upon which our work in this connection has been founded. As the types which we have discovered do not all occur in any given variety in any one orchard, it is safe to assume that many types exist which we have not found as yet. The discovery of the types under observation has been a gradual matter, as our knowledge of varieties has grown, so that it is equally safe to assume that types exist in the orchards under observation which we have not recognized as yet.

We use the term type to include only the variations from the variety which occur frequently and are commercially important, and not the al-

most innumerable occasional variations which we find in citrus orchards. These more or less infrequent cases are collectively called sports or variations for want of a better name.

We have under observation at present eleven types of the Washington navel orange, five types of the Marsh's seedless grapefruit, seven types of the Eureka lemon, five types of the Lisbon

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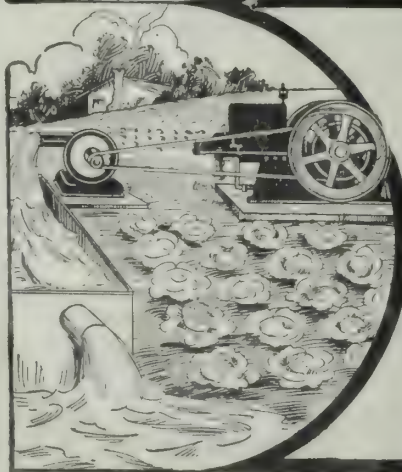
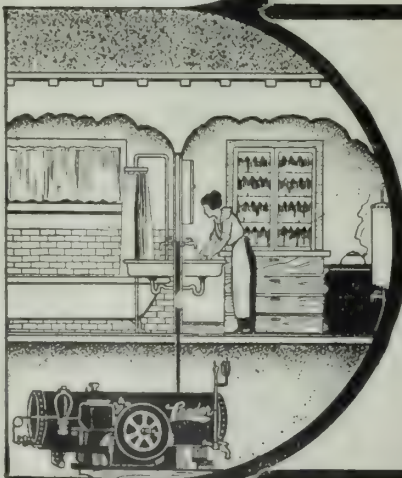
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lemon, eleven types of the valencia orange, and three types of the Daucy tangerine; a total of forty-two citrus types in all. Some types are relatively speaking of much greater commercial importance than others, and some types occur much more frequently than others, but all included

in the above list are of practical and commercial importance. It is also true that the frequency of appearance of these types varies in different orchards, some orchards containing many, while other orchards contain only a few.

(To Be Continued.)

Constructive Agriculture—No. 23.

CALIFORNIA FARMING AND AN EIGHT-HOUR DAY.

[By G. H. HECKE, Woodland, at the Davis Fruit Growers' Convention.]

The following true copy of the Initiative bill known as the universal eight-hour law will be voted upon by the electors of California at the fall election. The subject of farm labor is of vast importance to the social and industrial welfare of the state, and deserves the most earnest consideration by all our citizens who are interested in the progress and well-being of this great commonwealth.

"Any employer who shall require or permit, or who shall suffer or permit any overseer, superintendent, foreman, or other agent of such employer; to require or permit any person in his employ to work more than eight hours in one day, or more than forty-eight hours in one week, except in case of extraordinary emergency caused by fire, flood or danger to life or property, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than \$50 nor more than \$500 or imprisoned in the county jail not less than 10 nor more than 90 days, or both so fined and imprisoned."

CALIFORNIA'S PLACE IN FARMING.—California ranks high in the achievements of agriculture, and if left to the enterprise of the farmers and their friends, who have brought about this remarkable position, the State will reach the highest place in the maintenance of the world's food supplies. Following the era of gold mining, the growing of cereals became the next important industry of the State, to be displaced toward the end of the nineteenth century by diversified farming with the fruit industry in the leading position, which has been maintained and augmented until the present day. Gradually the dairy and stock interests came to the front until now the comparative proportion of the State's leading farm products shows up in values as follows, according to the figures compiled by the California Development Board:

Cattle, horses, sheep, swine.	\$ 77,584,300
Dairy products	34,950,552
Eggs and fowls	18,205,896
Cereals, hay, potatoes, sugar beets	126,516,800
Orchard and vineyard products	114,513,120
Total	\$371,770,668

It is self-evident that an industry producing an annual gross value of nearly 372 million dollars is of such tremendous importance to the welfare of every worker in our State, whether employing his own capital or working for wage compensation, that all legislation seriously affecting California's agricultural prosperity or standing in the food markets of the world, must be seriously considered. Not only will the quality of such legislation affect the farmer's value in the industrial progress of the State, but it will bear upon the welfare of the wage-earner of every occupation, and influence the

ability to do his part toward maintaining the advanced position California has attained. Hence it may be well to give the proposed eight-hour act as full a discussion here as time will permit and show what this measure, if enacted, would do to the economics of farm practice, to the social welfare of rural life, to the interests of wage-earning labor and to the general progress of our State.

IMPORTANCE OF AGRICULTURE.—It is self-evident also that the moneys and capital poured into this State are due to the brawn and brain and enterprise of the men who have had the strength and courage to develop an industry that depends upon so many speculative chances, such as crops produced abroad and in the States, that depends upon and must bear alone the contingencies of drought, rain and untimely frost. And it is equally evident that the moneys and capital involved in this great industry are not selfishly used by these men in idling away their gains in foreign countries or at the amusement centers at home. But this capital is immediately returned into use for the further development of the resources of this great commonwealth. New machinery is purchased, giving employment to skilled, organized labor; buildings erected, using lumber, paints, hardware, again making employment for organized labor; wherever agriculture flourishes, cities are rapidly building, for prosperous farming communities create prosperous trade and commerce. But the reverse is true wherever adverse contingencies strike the farming interests through drought, labor deficiencies, competition in foreign markets, or whatever it may be that diminishes the income of the farmers. Then the business in the cities becomes depressed and "trade is dull." This is the farmers' relation to the prosperity of all.

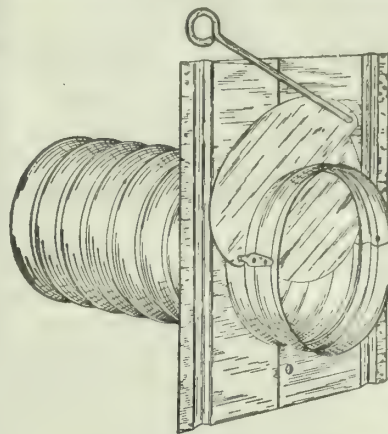
With good crops and reasonable prices, the farmer is a liberal buyer. His family is then able to afford some of the luxuries of life. His children have a better chance of education and his home may be enriched with libraries and other evidences of the standard American life. He may invest in a motor car, enabling him to come in closer touch with all the business and social interests of his community. All these expenditures are beneficial to labor and trade of the urban population. The farmer pays for all and upon his prosperity all must depend. Why place him under further legal restraint in the management of his farm, when of all callings his is least subject to the interference of police restrictions?

California has just passed through a remarkable period of industrial development, with a corresponding gain in population and wealth. Electric roads, improvement of steam roads, irrigation and reclamation projects have felt this stimulus in marked degree. Labor, much of it unskilled, has been employed in these astonishing

enterprises. But a reaction has taken place during the last year, caused by scarcity of capital and accentuated by dry seasons under which all branches of agricultural industry in California have suffered. It would not be wise now to delay the recovery to normal conditions by forcing upon any productive industry of the state such radical legislation, which instead of helping would hopelessly retard. It should be the business of all friends of creative enterprise to foster legislation beneficial to agriculture, and

hence beneficial to the whole people. Should such a measure as the proposed eight-hour bill become a law it would be greatly detrimental to the prosperity of the state, as will be shown later. Would it, however, improve the condition of those in whose name this bill is being promoted? Let us first anticipate its effect upon the wage earners at the greater centers of population, whom we may approximately class under two great divisions.

(To Be Continued.)



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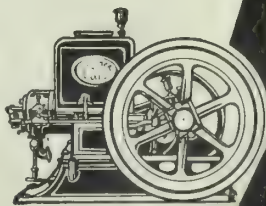
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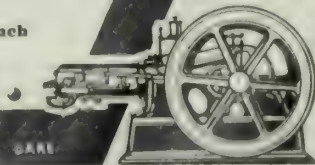
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between 30 and 35 pounds of silage and all of the alfalfa hay that they would clean up, which we should judge, amounted to about 10 pounds. In order to further balance the ration he fed about three pounds of cottonseed meal, and either kaffir corn or barley in small quantities. In another year he promises to have enough data to state more accurately just which ration gives the best results, and until that time or until someone else comes forward with such data, little else can be said.—**EDITOR.**

VETERINARY QUESTIONS.

[Answered by Dr. E. J. CREELY, San Francisco Veterinary College.]

BLOODY MILK.

To the Editor: I would like to know what to do for a cow that has blood in her milk. She had a calf last December and her milk was bloody for a short while and then was good, no trace of blood being found in it. About three weeks ago it became bloody again. For the past week I have been feeding bran, night and morning with a tablespoonful of sulphur in it, but she has not improved.—**W. H., Vallejo.**

This is caused from an injury. Let the milk from each teat stand in different glasses, so that the gland giving the bloody milk can be detected, then inject $\frac{1}{2}$ water and $\frac{1}{2}$ hydrogen dioxide, thoroughly neading the gland, after which massage and milk the gland of every vestige of fluid. Repeat once daily for several days, then test with the glasses again. It is better to get the first and last milking.

MULE IN POOR CONDITION.

To the Editor: I wish to ask what I can do for a mule I have. He did not shed off this spring and is in poor condition. His water seems bad, I fed hay that was damaged last spring and guess it did not agree with him. Kindly give me your advice on the matter.—**E. S. G., Modesto.**

Fix the teeth and give the following in a bran mash, once a day: Nux Vomica Pulo 3 ounces, Iron Sulphate 2 ounces, Soda BiCarb 6 ounces, Sulphate Magnesia 4 ounces and Pulo aniseed 2 ounces. Mix thoroughly and give a heaping teaspoonful, twice daily in mash.

MAY BE A TUMOR.

To the Editor: I have two cows that have been bred 4 or 5 times, but they keep coming back again. They both had healthy calves last freshening, and there is no abortion in the herd. They have no discharge and seem in good health. In examining their vagina small reddish pimples are noticeable. Are you able to advise a cure?—**W. W., Modesto.**

Have a veterinarian examine the neck of the womb. An occlusion exists in the form of an indurate Os or perhaps a tumor. Under the circumstance the cows should breed.

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Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

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HOLSTEIN BULLS—Pure-bred young Holstein bulls for sale on Thompson Ranch, near Napa. For prices and particulars, address J. B. Agee, Napa, Cal.

LUCERNE FARM JERSEYS—Silver Marquis and Noble Warden herd bulls, both sired by \$17,000 bulls. Young stock for sale. Also Reg. Duroc Jersey swine. W. Fisk, Davis, Cal.

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SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

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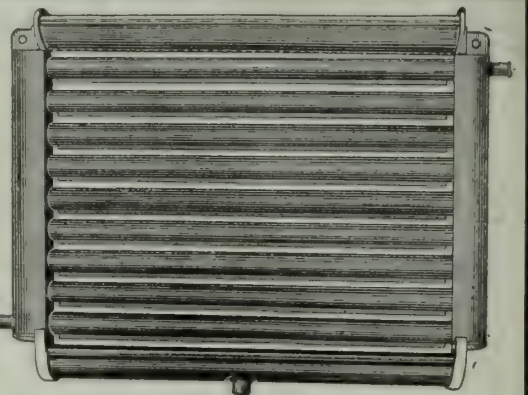
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Corcoran, Cal., Tuesday, June 16, 1914.

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FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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With the Live Stock Men.

Harry Clark, manager of the Black Hawk Stock Ranch at Burlingame, writes that W. A. Ward, proprietor, is now in England, where he is purchasing Shire horses which will be shown at the Panama-Pacific Exposition in 1915.

The California Swine Breeders' Association, at its recent meeting held at Davis, passed a resolution favoring the coming bond election for providing better facilities at the State Fair and also laid plans for the holding of annual consignment sales.

H. B. Goecken, of Livermore, recently sold two Holstein bulls from his herd to S. R. Crow, of Hayward, and S. Behrens, of Winehaven.

A cow-testing association was organized at Gridley, Butte county, recently, by J. Anderson, State Dairy Inspector. Over 1100 cows were signed up and a large part of the money has been paid in. It is interesting to note that several new associations have been started and are planned on being started this year. A report from a subscriber at Thermal, Riverside county, states that dairymen in that section are contemplating the organizing of such an association.

A report from Livermore states that Hayes and Delaney, of that place, have made a number of large sales of Mexican and native cattle during the past month. They now have on the way several hundred head more from Arizona and New Mexico.

An ordinance was recently passed by the supervisors of Butte county requiring the county veterinarian to make inspection of all dairies, slaughter houses, and other places where foodstuffs for human consumption are prepared. The work will be done by the veterinarian in connection with his work of eradicating glanders and other diseases.

At a meeting of the Merchants' Association, of Hanford, Kings county, last week, it was decided to raise sufficient funds for the partial payment of a dried-milk factory at that place.

According to Rodden and Gatzman, of Oakdale, who recently shipped into that district over 700 head of Arizona steers for fattening, feeder stock is getting scarce in Arizona, since the supply from Mexico has been shut off.

Livestock Inspector Longley, of Fresno county, reports that no less than seven head of mules and horses died in that county last month from glanders, all of which would have been prevented had then been reported upon earlier by the farmers.

An attempt is being made by citizens of Petaluma, in connection with D. O. Lively, of the Panama-Pacific Exposition, to have a part of the live stock which will be shown at the Exposition shipped to Petaluma before being shown, in order that they may be better acclimated before showing.

The early cattle market at the Portland Union Stock Yards, last week, was strong, and best hay-fed steers advanced to \$7.85 and \$7.95. Later the market dropped off to \$7.75, at which price the market was in good shape, a carload of fancy baby beef

featuring at \$8.15. Butcher lines were all firm with a good demand. Receipts of hogs were heavy, extreme tops going at \$7.90, with bulk sales around \$7.75 to \$7.80. Mutton offerings were large, but prices held steady. A few choice yearlings sold at \$5, old wethers at \$4.50 and ewes \$4 to \$4.35; spring lambs, \$5.50 to \$6. Bulk of receipts were from western Oregon points.

A report from Tulare county states that Dairy Inspector C. A. Peairs is making a complaint against those dairymen who do not guard against flies in the milk. One dairyman was fined \$50 last week as a result of this.

J. D. Faught of Fort Worth, Texas, has recently shipped several head of horses from Tulare county which will be distributed through the cotton sections of Georgia, Alabama, Louisiana, and Mississippi. He is buying small mares and states that he wants 1000 head.

The Pig Club, which was recently started in the high school at Woodland, is meeting with great enthusiasm by the students. H. G. Armstrong, of the Oak Grove Dairy Farm, states that he has sold some 10 or 12 head of pigs to the boys of the high school for this purpose.

State Veterinarian Keane was recently called to Meridian, Sutter county, to vaccinate a number of hogs. The report states that cholera had made big inroads on the herd before his arrival.

Dr. Jackson, county veterinarian of Butte county, states that the epidemic of glanders which recently broke out in that county has been entirely stamped out, and that there is now only one ranch where there are any horses that show symptoms.

BETTER SELL THE CALF.

To the Editor: I have a two-weeks-old bull calf, for which I am offered \$5. I have no pasture, but will have more oat hay than I need for horses. Will it pay to raise calf to sell for beef. Can I do so on oat hay alone, or would it pay to buy alfalfa hay at \$12 per ton, or had I better sell calf now, also hay. If it should pay to raise calf, should it be castrated, and at what age should it be sold for the greatest profit (calf dam is just cow, sire good Jersey stock.)—W. J. K., Fair Oaks.

[Jersey stock is discounted by the butcher; we would take the \$5 and sell the extra hay or feed it to a heifer calf. Male calves should always be castrated at an early age, say between 10 days and 3 months unless they are purebreds and likely to prove good for breeding. Your calf is not such.—EDITOR.]

SORGHUM SILAGE FOR STEERS.

To the Editor: In feeding sorghum silage, together with alfalfa hay for fattening beef stock, what should be the proportion of each to make a balanced ration; and how much will a two-year-old steer eat in a day?—C. L. M., Oakland.

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attention, is the work done on the Tehachapi Cattle Company's ranch, near Bakersfield, last winter. While the results were financially good, Mr. Hill states that he has not satisfied

himself as yet just what the proportions should be of alfalfa hay and silage, he having used both Indian and sorghum silage in large quantities. In fattening two-year-old steers, he fed

A Run Down Ranch and Live Stock

[Written for the PACIFIC RURAL PRESS.]

Investigators claim that one of the surest and most economical ways of improving the soil is through the maintenance of live stock; and while many California farmers have supposed that their land was rich enough to stand continual one-crop practices, there is much of our land that is already beginning to show the result of such methods.

It was a ranch long farmed to hay and grain to the exclusion of all other crops that Dr. H. N. Henderson, of Martinez started to improve some three years ago, through the use of Guernsey cattle and a systematic rotation of crops.

There are 66 acres in the ranch, most of which is hilly. Small patches over the ranch that are fairly level will be seeded to alfalfa in a hope to build up the fertility and at the same time furnish feed for the dairy, which will in turn supply more fertilizer in the shape of manure.

Part of this lower land as well as some of the hillsides are farmed to other crops such as vetches, horse beans, and rye with good success; in fact it has been found that such crops produce more feed for the cows and hogs than barley, wheat, or oats would do and also work into the upbuilding of the soil system nicely.

Besides the lost fertility of the hilly lands there is another drawback to them in the raising of ordinary crops, inasmuch as a great deal of such land is shallow, being underlaid with sandstone. Not only is this an objection for deep rooted crops but also for shallow rooted ones; as the conserving of moisture on such land is a serious factor. For that reason it has been necessary to develop water for pumping and install a pumping plant. In the meantime root crops such as carrots and beets have been grown on this land.

Although these root crops have been found satisfactory as a feed, and will likely be grown extensively on the more shallow spots, much of the hill land produces good crops of silage corn without irrigation. A considerable acreage has been planted to that crop this year and a silo will be built during the summer or fall months. It is thought that by farming the land in this way with the varied crops, enough feed can be grown to maintain a moderate sized dairy without purchasing any feed from the outside.

The disadvantages of the hilly and shallow soil from a cultural standpoint, are not so pronounced in the matter of location for dairy buildings; in fact the hill upon which the buildings have been erected furnishes excellent drainage facilities, which is a big help on any dairy.

Upon this hill the residence stands, also, and overlooking as it does a big scope of the adjacent country the location may be said to be ideal.

The well and pumping plant has been installed on top of the hill, the reservoir being placed on the highest point and in this way furnishes a supply for most parts of the ranch.

Believing in the more progressive methods of farming the land, Dr. Henderson soon found that if he was to get the most from the feed grown, he must have well bred live stock in place of scrubs. Accordingly a small herd of registered Guernsey cows were purchased and a start made with

Hampshire swine, which were until that time, little known in that section.

The cows had been bred by the Ladd estate in Oregon and contained some of the finest blood lines in the Guernsey breed, notably King of the May and other Langwaller stock. The herd sire selected at that time and used since in that capacity is Impt. Lord Kitchener, an animal of much merit as is evidenced by the quality of his off-spring.

Among the cows that have been officially tested are Clementine Mabel with a record of 10,746 pounds of milk and 534.9 pounds of fat. This cow is nine years old and besides being a fine producer is a show animal, both of which she has apparently transmitted to her daughters, one in particular being the cow Golden State Beauty with a record of 1248 pounds of milk containing 71.33 pounds of fat in one month.

Since the starting of the pure-breds, it has been the practice to keep all heifer calves for further enlargement of the herd; and in this way from a small start the herd is gradually being brought up to the amount that the ranch will accommodate.

The raising of this kind of stock on land that would not ordinarily be considered dairy land seems to show that there are very few localities where live stock cannot be profitably handled in California, provided the farmer uses the more modern ways of doing things.

WHO HAS RAISED CALVES ON HAY TEA?

To the Editor: Several years ago I read in the Breeders Gazette that dairymen in England, instead of using milk to raise calves, steeped hay and used the tea as a substitute with good success. About three years ago I read an item in the Saturday Evening Post stating that an Idaho man in experimenting with alfalfa found that tea from steeped hay was equal in feeding value to skimmed milk. Do you know if any of the agricultural schools have carried on experiments along such lines? I would also like to get information in regard to feeding hogs grain, giving ratio of pounds of pork to pounds of grain fed.—L. C., Los Molinos.

[Hay tea as a substitute for milk is possible, as the experience of the ancients has demonstrated but they had few calves and lots of time to fuss with them. Then too dairy manufacture either called for the whole milk or left the skim milk in bad condition for feeding. Now by the use of the separator and sale of cream, the calf-feeder has sweet warm skim milk than which there is no possible substitute in contents of nutritive material at the same cost. Therefore all substitutes are out of the question and sweet skim milk, reinforced gradually by meals and followed with grass and hay, is the universally accepted menu in calf raising. The few tests of hay tea at the experiment stations, support this conclusion, even when the hay tea was reinforced by the most elaborate grain preparations.

An average of about 500 experiments with feeding hogs different kinds of grain gives the following weight in pounds for each grain named, for 100 lbs. of weight gained:

Corn, 485; Kaffir corn, 529; oats, 472; peas, 439; wheat, 452; barley, 418; mixed grain, 432.—EDITOR.]

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New State Holstein Record.

California Holstein breeders are making big headway in their work of official testing, with the result that new State records for butter fat are becoming the rule rather than the exception. In line with this we have a communication from A. W. Morris and Sons, of Woodland in which they say:

"The seven day butter record for the State has recently been broken by one of our cows, Pet Salambo of Riverside, with a production of 33.05 pounds butter. It will be remembered that she was recently reported as the third cow in the herd to produce 1000 pounds butter in a year.

"The staying qualities of this cow

have been demonstrated by the following records. As a four-year-old she gave 716 pounds butter in 320 days, and after being dry but a few days, calved again and on official test made 31.57 pounds butter in seven days. Her best seven days milk was 713 pounds. She was run semi-officially for the year and made 1002.53 pounds butter from 22,287.0 pounds milk. Following this year's test she has made the thirty-three pound record mentioned above.

"She dropped a beautiful bull calf, whose sire's dam has the following milk and butter records: Butter, 7 days, 32.67 pounds; one year, 1043.83 pounds. Milk, one day, 118.90; seven

days, 817.30; 365 days, 25,557.10 pounds. The seven-day milk record of the two nearest dams is a world's record.

"Pet Salambo of Riverside has displayed her prepotent qualities through her daughter, Lady Mead Salambo, who made 647 pounds of butter with first calf at 2 years and 2 months. Another daughter is now on test at 2 years and 3 months and promises as well, she being sired by a son of Aralia De Kol, 1142 pounds butter in a year."

[The chief thing about this big weekly record that looks good to us is the fact that the cow, as Messrs. Morris have said, is a good yearly producer as well as a weekly one, and as we have pointed out before, experience seems to show that the persistent cow

is the one to breed from as well as the one to maintain for dairy purposes.--J. C. L.]

BARN PLANS FURNISHED.

To the Editor: I am planning to place new buildings on my ranch; and I wish the barn to be the best possible. Where can I get some information as to plans and drainage. The land has very slight fall.—K. C. P.

[The United States Department of Agriculture furnishes plans for new buildings, or for the remodeling of old ones. Write to them at Washington telling what kind and size of barn you wish, the lay of the land, the proximity of gravel for concrete foundations and floors, the local cost of lumber, etc.—EDITOR.]

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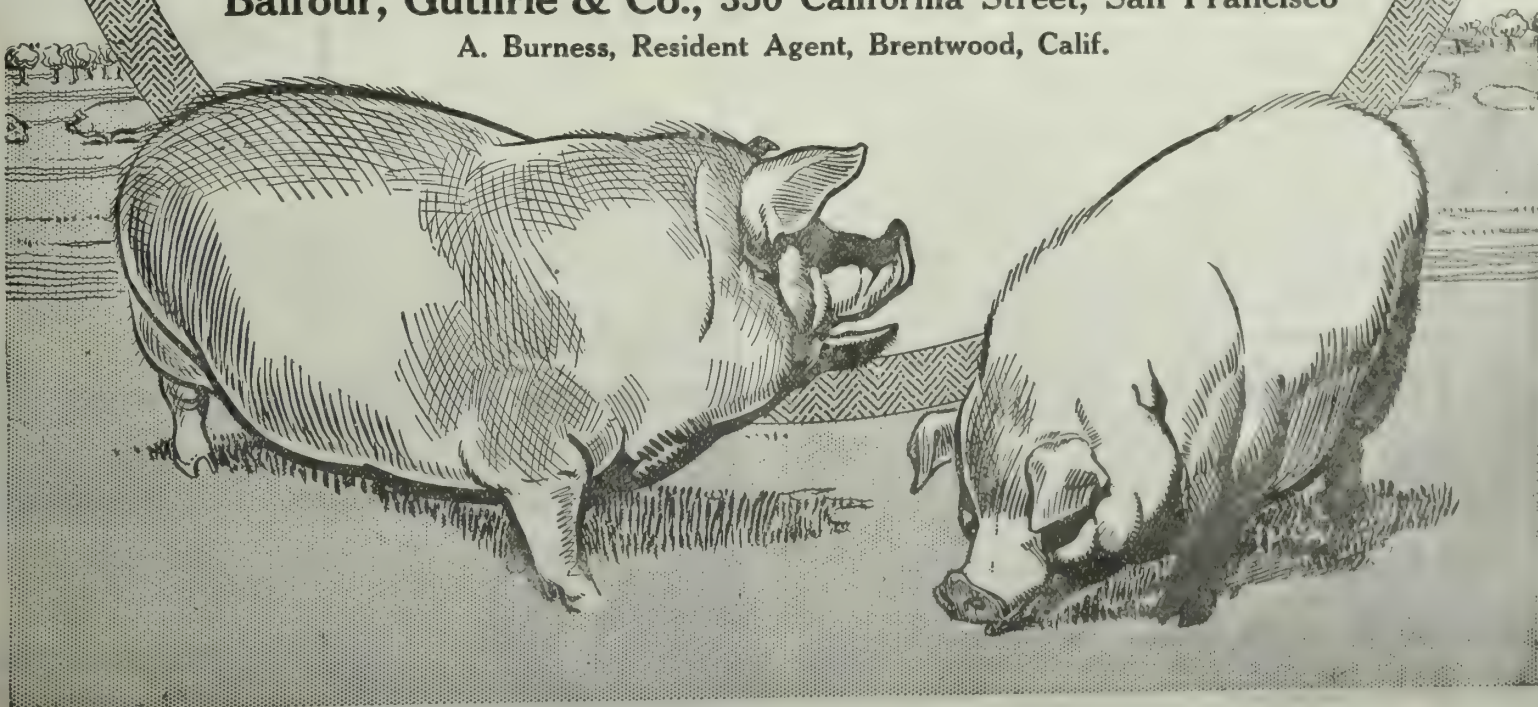
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A. Burness, Resident Agent, Brentwood, Calif.



Preparing the Winter Egg Supply.

[Written for the PACIFIC RURAL PRESS
by SUSAN SWAYSGOOD.]

With eggs at less than half the price they will bring next winter it would appear to me a good plan to economize by preparing now for the eggs needed for winter cooking. It is hard to cook for a family without eggs, and it is hard to use all one needs when they are bringing double price. The law forbids selling eggs, as

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INDIAN RUNNER DUCKLINGS, 20c, 25c. Glendale, Fleming Ave., San Jose.

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"fresh", when preserved in any way whatever, but that does not apply to home use. Every farmer and poultryman can add to his bank account by putting up now the eggs for family use. Doing so puts more eggs in circulation for those who were not privileged to store any; and more money circulates to the farmer and poultryman who is forehanded enough to save his own eggs.

THE BEST METHOD.—There are several methods of preserving eggs but the waterglass or "sodium silicate", is one of the best. Whichever preservative is used, the main thing is to see that the eggs are collected fresh every day (twice a day is better) and that they are clean. Dirty eggs should never be put up because they will rot "sure" and cause the eggs that come in contact with them to rot.

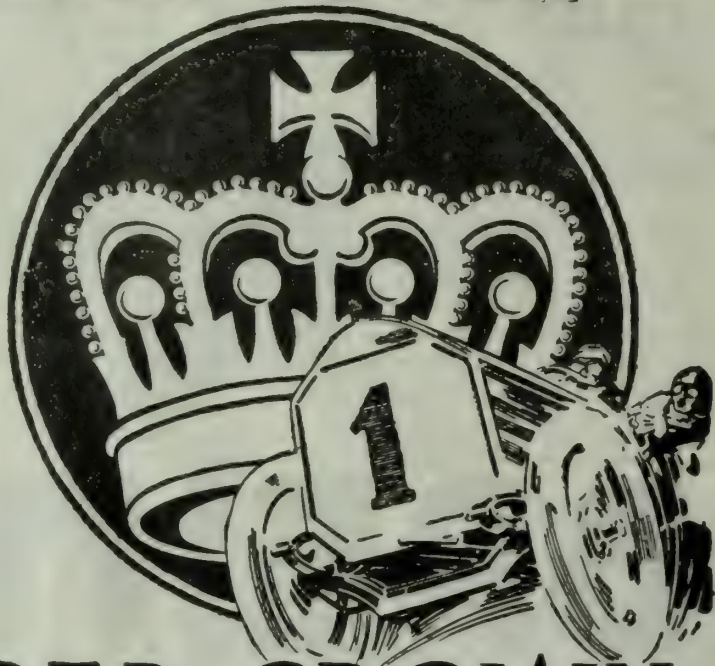
There are two kinds of waterglass, one is a dark looking syrup that comes from Germany. While that is safe enough to use, it is not so good as the clear white kind; and it pays to see what the druggist is offering you for your money. To one quart of sodium silicate, (waterglass syrup) add 9 quarts of water. This is as weak as it is safe to use. Boil the water and set aside to cool; then add the waterglass, mix well, and when cold it is ready for use. Good earthen jars are the very best thing to pack in, but I have packed successfully in clean five gallon oil cans. But crocks or wooden kegs are safer and easy to handle. Scald them out well and air, then pack the eggs small end down for the bottom layer, large end down for the next, letting the eggs rest in between spaces. It will surprise you to see how many more eggs you can put in a crock if you packed in this way than if put in haphazard. Then pour the prepared and cooled waterglass over the eggs. Never let the top layer of eggs be above the waterglass. As it evaporates add a little fresh solution to the crock.

LIME-WATER METHOD.—This is an older and cheaper method of preserving eggs and has been in use by bakeries and restaurants for years. To 16 ounces of good live lime use one gallon of boiling water and eight ounces of table salt. Slake the lime, then add the salt stirring well, and let it stand a day or two to settle. Draw off the clear solution and use as you would the waterglass, except that under no condition use tin. Crocks or wood are the only things to use for this method. If care is taken to have the eggs clean and fresh the results will be good.

Other Methods.—I have tried and found very satisfactory, the bran and salt method. This is so simple and cheap that any one can use it; and for my own use I always prefer eggs kept in it. In Dakota I used to put eggs down all summer long with this method and bring them out and sell in the late fall for harvest.

Take one part whole oats, two parts good dry bran and one part dry salt. If the salt is wet or even moist it should be dried out in the sun or in an oven. Now be sure all the ingredients are dry before packing eggs in them. Line a good clean grocery box with two or more thickness of paper, newspaper will do, then put in a layer of the mixed bran, oats, and salt about five inches deep. Pack your eggs but see that no two touch each other, there must be a small part of the mixture between the eggs. It is best to leave

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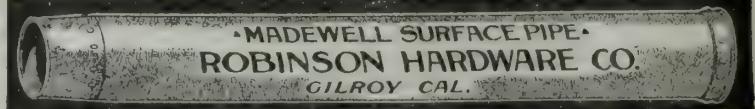
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a space so that the next layer of eggs will fit in the spaces thus economizing space and ingredients. Keep packing this way, putting in the day's eggs as soon as collected; and when the box lacks four or five inches of being full, cover with the mixture and paper over that; then nail on boards and set away in the coldest place you can find. Every time you have occasion to go near the box, turn it over so that you change the small end up one time and down the next, but never set box endwise or sidewise, if you do the yolk will settle to one side.

And this may be said of all methods, eggs must never be packed for any length of time on the side or the yolk will settle. A cool dry cellar is the best place to keep eggs in but see that it is ventilated.

Another method of keeping eggs for home use is to dip them in a solution of paraffine and store away in bran in boxes. This is more trouble than any of the previous methods but for a small family that are particular about the quality, it pays. Eggs that are preserved by the last two methods retain all the natural taste and are positively as good as though just laid. When the air is excluded and the germ or embryo kept out by removing the male from the pen, there are no deteriorating influences at work, and the egg keeps indefinitely.

Get one or more cakes of paraffine, such as is used to pour over jelly, melt so that it is liquid. This is best done by shaving fine, and putting into some vessel that can be placed in hot water. Take the eggs one at a time in a wire spoon and dip in the wax. Hold just an instant while the melted wax sets on the egg then set in the box

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of bran already prepared for it. The operation is rather slow but amply repays one for the trouble. To my mind these eggs are really better flavored than a new laid egg.

As necessity is the mother of invention, and the greater part of my life has been spent in providing necessities for a large family and no great abundance of money, I have used the inventive genius in various ways; some proved failures and were never used but once while others were worth more than money both to myself and others. Now the simplest way of all to keep eggs, also the cheapest is the following, but unless right conditions prevail the eggs will be a total loss.

This means a small place where the ground is cool and shaded at all times, also that the earth is clean and free from any kind of foulness either in odor or taste. Clean sand is about the cleanest thing in ground and if such a plot of ground is on hand and well shaded, it will do all right. Take five gallon oil cans, or any can that can be sealed up will do, scald out well and have a cover ready to put on as soon as the eggs are in. If nothing else can be gotten put a clean cloth over the eggs and over that a good thick layer of salt pressing into corners and crevices to exclude the air. Have a hole dug in the ground before commencing in which to place your egg can; and see that it is deep enough to go under ground one or two feet. Having put in your well filled and covered can fill up the hole and tramp the ground solid above. Keep that place cool and dry and your eggs will keep three months if put down fresh and clean. And that is the case with all methods, cleanliness both in the nest and in handling after the egg leaves the nest and a knowledge of the age of the eggs put by. It is waste of material and time to put anything but the freshest of eggs by to keep, for they absolutely won't do it. The housewife who must rely on eggs she buys is simply wasting her money and time trying to preserve eggs. Only the farmer and those who keep poultry have the good fortune to be in the class that can provide a winter supply of eggs while eggs are cheap.

SUMMER PEACH PRUNING.

Summer pruning of peaches is practiced by Ed Lawrence of Corning, because that practice enables him to thin the fruit both by pruning and by hand picking at the same time; and he has more time for that in summer than in winter. Some varieties have already been pruned this May. This practice promotes healing when sap is flowing well, and no ill effects have been noticed. Loquats are ripen-

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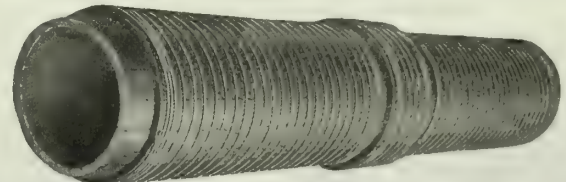
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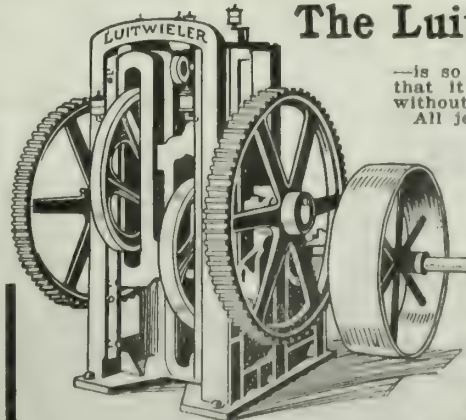
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ing on this ranch. They have a delicious acid flavor, and Mrs. Lawrence made some into perfect jelly last sea-

son, which has a first taste of apple and quince combined and a secondary flavor all its own.

R. E. H.

The Home Circle.

New Use for Aphids.

To the Editor: When I moved to my South Berkeley lodge I planted climbing roses along my side street fence and cryptomeria trees on the sidewalk. As soon as the roses started to bloom I found that my neighborhood was full of lovers of beautiful blossoms; every woman who went by broke off sometimes a branch and sometimes only a bud. Apparently they all loved flowers; enough at least to break great branches in order to get a single blossom, but yet not enough to plant and take care of any of their own.

I have been able this year, however, to obtain some malicious satisfaction; after they break off a huge branch and proceed to trim away all but the blossom they wanted, they evidently discover the presence of the abundant sticky green aphids with which the vines are fairly crawling, and in disgust throw away the flower.

My cryptomeria trees got a good start, but soon every urchin who came by pulled a twig from them, and the butcher and bakery delivery wagon steeds chewed them. Those, however, which were situated on the side street where the underfed delivery Pegasus reposed not, those grew fair, and finally, when about five feet high, were "trimmed" by the Berkeley street de-

partment. After this department had trimmed them they looked like the tail of a poodle dog which had just been clipped in a stylish manner. They were just a little tuft of foliage on the end of a long limber stalk.

Thus were my cherished plans balked; and now as I am about to enter a new land of the mortgage and monthly payment, I want to know where I can procure some "Upas" trees to plant on the sidewalk so that their lethal vapors will send the street department employee to a better and a fairer land before he completes his mutilation of my street trees, and also, Mr. Editor, what vine can you recommend for me to plant along my new side fence, the touch of which when broken will not be deadly, but dangerous; something that will breed leprous sores on the vandal digits of the flower stealer when he or she breaks away branches.

If you can recommend to me the catalogue of some nursery which can supply such plants, you can do me a service and boost yourself with the nursery for recommending their catalogue.—EDISON BURBANK JONES.

Shrubbery and flowers are set out and cared for by the property owner, not only for his own comfort, but that those who live near or pass by may take pleasure in them. The person who picks the flowers or breaks the shrubbery for his personal gratification is robbing the public, and if he should run across a plant "the touch of which when broken will not be deadly, but dangerous," he would be receiving just what he deserved.

Uses of Turpentine.

After a housekeeper fully realizes the worth of turpentine in a household, she is never willing to be without a supply of it. It gives quick relief to burns; is an excellent application for corns; and is good for rheumatism and sore throats. Turpentine is a sure preventative against moths; by dropping a trifle in the drawers, trunks and cupboards, it will render the garments secure from injury during the summer. It will also keep ants from the closets and storerooms if a few drops are put in the corners and upon the shelves, while it is sure destruction to bed bugs, and will effectually drive them away from their haunts if thoroughly applied in all the joints of the bedstead.

Mother's Helpers.

Mother had a hard headache and had gone upstairs to lie down. The children were in the sitting-room talking it over.

"I am so sorry for mother," sighed Marjory.

"So am I," said Teddy.

"How sorry are you?" asked David. "I am so sorry for her that I am going to fill the wood-box as full as it will hold, and get a lot of kindling, and start the fire for supper."

"Oh," said Marjory, "now I see what you mean. I am so sorry that I am going to ask her to let me get supper. I can make toast and tea, and scramble eggs."

"I'll help set the table and wipe the dishes," said Teddy. So mother got a nice rest that helped to drive away her headache.

"I don't think that folks are really sorry for one," said David, "unless they are willing to help."

A man went to a judge, and asked whether he could bring suit for slan-

der against a man who had called him a rhinoceros. "Why, certainly," said the judge. "When did he call you that?" "About three years ago."

"Three years ago! And you only start suit today!" "But, your honor, yesterday I saw a rhinoceros for the first time."—Berliner Illustrirte Zeitung.

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Our Young Folks

The Transient.

(Concluded From Last Issue.)

Gladys had slept for some hours when she woke with a frightened sense of something wrong. The room was stifling full of smoke, and someone was pulling her sharply.

"Come out of the room—the house is on fire!" whispered Miss Damer. "Get your shoes and your heaviest coat. Come!"

Emily and Catherine were already attired, and clutching their pocket-books. Miss Damer led them to the lawn, where most of the girls were huddled, some sobbing, some staring dumbly at the blazing dormitory wing.

Then Gladys felt herself grow cold and stiff with a fear she had never known before. A sickening terror froze the blood in her veins! The girls in the upper dormitory were not all down, and the flames were bursting from the windows beneath.

The gardner, the chauffeur of a neighbor, and the neighbor himself were already fastening ladders together. But those faces at the upper window!

Gladys saw the men test the ladder and shake their heads. A bucket-line was passing the well-filled pails steadily and swiftly, but the water they dashed on the flames made seemingly little impression.

"I can go up on that! I weigh only a hundred and ten!"

The voice was Miss Dunbar's! Before anyone could stop her, she was half-way up, and steadying the ladder against the wall. Once at the top, she disappeared in the room, and handed the girls out, one by one. They tumbled, some of them, before they reached the ground, but strong and kindly hands were ready to catch them. Miss Kent was invaluable. She had already extinguished the parent blaze from a stove used only occasionally, and now she was putting rugs and comforters on the ground, and gently guiding to them the girls who had forgotten to put on their shoes. Miss Damer's help testified to the value of athletics, but she did hardly more than Miss Kent!

Now it seemed that everyone was safe.

"No," sobbed Estelle, clinging to Miss Kent. "Hope was way, way back. She thought we could get out of the other window."

At that moment more men and stronger ladders came. Silence—the silence of terrible dread—fell over those below as the chauffeur ascended, for Miss Dunbar was not at the window—and where was Hope?

The chauffeur disappeared. A thin line of smoke came out of the window.

The next moment, the chauffeur, with Hope's unconscious form on his arm, appeared. Miss Dunbar was smiling, actually smiling, at the window above; and when she came down, every soul rejoiced.

The clatter of the town fire equipment came tearing along, and soon the flames died down in sullen smoke, which in its turn was conquered by jets of water. Rejecting the offers of neighbors to provide for the girls, Miss Prince led the way to the main body of the house, and makeshift cots were hastily prepared.

There was no commencement, of course. The girls left the next day,

minus many of their possessions. Gladys clung to Miss Prince when her time to go was at hand.

"Isn't it lovely to hear everyone talk?" she cried, "and how they're loving Miss Kent and Miss Dunbar! Why, she saved Hope's life at the risk of her own."

"Yes," said Miss Prince to Miss Ward, as they thankfully sat down to a quiet supper alone, that night. "But I'll try to manage next year so that we don't have to have a fire to make people love each other."

The Girl Who Was Vain.

Marion was a pretty little girl; she was also a vain little girl, and consequently she was a foolish little girl. And she was so foolish that she was not satisfied with the size of her waist, although it was very small, but wished that it was much smaller, like the pictures of beautiful ladies that she saw in the magazines that her mother bought.

She was so vain that she always used to carry a little pocket mirror about with her, so that she could arrange her hair, and see that it was tidy. One day she was sitting on the grass in a meadow filled with buttercups and daisies, and was, as usual, admiring her beautiful golden hair. Then she began sighing for a small waist. "Oh, I do so wish my waist were very small."

Then she heard a soft voice just by her, and, looking round, she was able to see a little man about 6 inches high.

"What did you say?" she said. "I said you were a very foolish little girl," was the reply. "Why are you not content with what you have?"

"No," she said, obstinately, "I do want a smaller waist."

"Well, come along with me, then," he said, and suddenly Marion perceived that by some means or other she had become as small as the little man. She followed him along until he came to a small crack in the ground, through which he squeezed himself. Marion followed him, and soon found herself in a fairly large room, with a number of little rooms opening out of it. "Come here!" said the little man, opening the door of the first room, and Marion saw a girl with a rather large waist, but very beautiful. In the second room was a girl with a smaller waist, but she was not so beautiful. And so, as they entered all the rooms, Marion found that the smaller their waists became the uglier they grew; the last one was a positive fright.

"Do you, after this, still wish to have a small waist?" Marion hesitated a bit, but she replied that she did. "A very, but then, you shall," said the man, grimly, and called to some assistants, who came forward, and, tying a rope round Marion's waist, wound the ends round poles situated at opposite sides of the room. Then they pulled hard, and every minute Marion felt her breath going as her waist grew smaller, until at last she could scarcely breathe at all. "Oh, stop!" she gasped. "Don't do it!"

"Why, whatever is the matter, Marion? Wake up, you silly girl!" And Marion opened her eyes and saw her chum Bessie. "I've been shaking you violently for a long time, but you wouldn't wake up. I want you to come to tea with me. Your mother says you can." And as Marion picked up her hat and went along with her friend to tea she said to herself that never again would she utter a wish to have a small waist.

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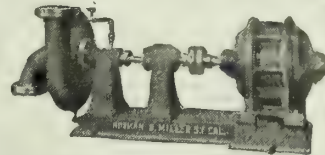
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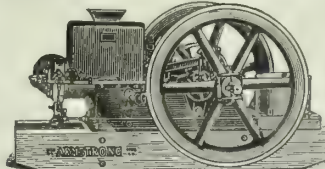
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(California)

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THE MARKETS.

San Francisco, June 10, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

Prices have been marked down a little this week in all descriptions, as the market is feeling the effects of the large crop in prospect. Arrivals from the North have been rather large, but are mostly deliveries on contracts. Dealers are still taking comparatively little interest in new wheat, the outlook for prices being poor.

California Club, cti....\$1.57½@1.62½
Forty-fold 1.62@1.67½
Northern Club 1.57½@1.62½
Northern Bluestem ... 1.62½@1.65
Northern Red 1.52½@1.60

BARLEY.

The market for both spot and future barley is easy, and the quotations show a further reduction. Spot barley is moving only in a small way, as buyers are not disposed to accumulate large stocks as yet, though the consuming demand is good and some export business is expected shortly. The speculative market continues active at a lower level.

Brewing and Shipping. Nominal
Choice Feed, per cti....\$0.92½@0.97½
Common Feed Nominal

OATS.

Several shipments have come in from the North lately, causing an easier feeling, though the market is not notably lower. The demand is not active, but offerings are pretty closely held.

Red Feed\$1.20 @1.30
Gray Nominal
White 1.30 @1.35
Black Seed Nominal

CORN.

Local dealers are carrying very light stocks, and while there is little demand, values are well maintained. This reflects a rather firm condition in the spot market East, though the new crop will be very large. There is not enough California corn here to quote.

California Yellow Nominal
Eastern Yellow\$1.80 @1.85
Eastern White Nominal
Egyptian 1.85 @1.90
Milo Maize 1.80 @1.85

RYE.

This grain is not moving at present, and the price is merely nominal.

Rye, per cti....\$1.45 @1.50

BEANS.

The only change this week is a slight advance in blackeyes, all other descriptions remaining firm as before. Dealers do not anticipate any further change of importance until the new crop is marketed, as spot supplies have been reduced to very narrow compass, and large holders are now cleaning up what remains. There is still a very fair inquiry, and it looks as if beans would be very scarce before new stock can be had. The acreage for this year, on the whole, is said to be extremely large, and thus far crop conditions have been excellent, though it is too early to size up the prospective output. The increase in the south is said to be mainly blackeyes.

(On wharf.)

Bayos: Cal., per cti....\$7.00 @7.50
Mexican 4.50 @5.00
Blackeyes 7.75 @8.00
Cranberry Beans 4.25 @6.00
Horse Beans 1.90 @2.15
Small Whites 5.00 @5.25
Large Whites 3.90 @4.50
Limas 6.50 @6.85
Pea 4.25 @4.50
Pink 3.75 @4.00
Red Kidneys Nominal
Mexican Red 6.00 @6.25

SEEDS.

Values are unchanged, with business quiet. New brown mustard is expected to appear soon, but so far there is no quotable change in the price. Alfalfa is almost entirely nominal, as there is no demand at present.

Alfalfa 12½@15 c
Brown Mustard, per lb.... 3¼c
Canary 7 @ 7½c

Hemp 2½@ 3 c
Millet 2½@ 2¾c
Timothy 7½@ 8 c
Yellow Mustard Nominal

FLOUR.

Values show no change, but there is no particular strength to the market, and the demand is light.

Cal. Family Extras....\$5.80 @6.20
Bakers' Extras 4.80 @5.40
Superfine 3.90 @4.20

Hay and Feedstuffs.

HAY.

Arrivals for the past week have fallen off a little, and the greater part of present offerings consists of old-crop hay, arrivals of new hay having been very light so far. The new stock, in fact, finds little attention and is hard to sell. It is reported that some new wheat hay has sold as low as \$8 to \$10, and volunteer hay around \$6. The consuming trade prefers the old hay at anything like equal prices, and there is accordingly little inducement to ship new hay into this market until the old crop is cleaned up. There is still a good deal of shipping on consignment. Offerings of first-cutting alfalfa are increasing, but there is little demand, the local dairymen believing they will need little alfalfa for a month or two.

No. 1 Wheat, or Wheat
and Oats\$11.00@12.00
do No. 2 9.00@11.00
Lower grades 8.00@ 9.00
Tame Oats 8.00@12.00
Wild Oats 7.00@ 8.50
Alfalfa 7.00@ 9.50
Stock Hay 5.00@ 6.00
Straw, per bale..... 60@ 90c

FEEDSTUFFS.

Everything in this line is quoted as before. The demand for most descriptions is moderate but steady, with rather light supplies in some lines.

Alfalfa Meal, per ton....\$17.00@18.00
Bran, per ton..... 25.00@26.00
Olicake Meal 34.00@35.00
Cocoanut Cake or Meal.. 26.00@27.00
Cracked Corn 41.00@42.00
Middlings 32.00@34.00
Rolled Barley 21.50@22.00
Rolled Oats 28.00@29.00
Shorts 26.00@27.00

Garden Truck.

VEGETABLES.

The market for miscellaneous garden truck shows little feature this week. The local demand, on the whole, is rather quiet, and a few lines of summer vegetables are coming in more freely, but in most lines prices are pretty steadily maintained. Tomatoes are coming in more freely from several sections, causing quite a sharp decline, and Mexican and other outside stock will soon be crowded out. Cucumbers are arriving steadily from Marysville, but prices show no further decline. Asparagus, though in rather large supply, still finds a good sale, and has been marked up a little, while rhubarb is steady at the old figure. Peas show a little narrower range, while beans are unchanged, and eggplant continues steady. Fancy corn from Alameda is lower, and ordinary stock will hardly bring over \$2 per sack.

Cabbage, per cti....\$ 1.00@ 1.25
Cauliflower, dozen 40@ 70c
Green Peppers, lb..... 12½@ 17½
Carrots, per sack..... 35@ 50c
Green Peas, lb..... 2½@ 3¼c
Tomatoes, Southern, crate 65c@ 1.00
Beans: Wax 3@ 5c
String 3@ 5c
Rhubarb, box 60c@ 1.00
Asparagus, box 75c@ 1.50
Cucumbers, box 40c@ 1.00
Eggplant, lb. 6@ 10c
Green corn, sack..... 1.50@ 3.25

POTATOES AND ONIONS.

First-class Burbanks from the delta district are now moving freely, with a good demand, and Oregon stock has also been marked up a little. New potatoes are unchanged. Bermuda onions have been shaded a little, as the trade is running more heavily to new reds, which remain steady as last quoted.

Potatoes:
River Burbanks\$ 1.00 @1.50
Garnets, lb. 1½@ 2c

New Potatoes, lb..... 1¼@ 1¾c
Oregon Burbanks 75c@1.25
Sweet Potatoes, per cti... 2.50@ 2.75
Onions: Bermuda, crate.. 2.00@ 2.25
New Red, cti..... 2.00@ 2.25
Garlic, new, per lb..... 5@ 8c

Dairy Produce.

POULTRY.

The poultry market is in rather poor shape this week, with a very slow demand. There is quite a lot of Eastern stock coming in, together with liberal shipments from California points, and the market is slow to clean up. This has resulted in lower prices for broilers, fryers and small hens.

Large Broilers 20 @21 c
Small Broilers, per lb... 18 @19 c
Fryers, per lb..... 22 @24 c
Hens, extra, per lb..... 19 @20 c
Hens, large, per lb..... 19 @20 c
Small Hens, per lb..... 17 @18 c
Young Roosters, per lb.. 24 @27 c
Squabs, per doz.....\$ 2.50@ 3.00
Geese, per pair 2.50@ 3.50
Ducks, doz. 6.50@ 8.00
Turkeys, live, per lb.... 20 @21 c
do dressed, choice.... 23 @25 c

BUTTER.

Butter prices have stood without change throughout the list for over two weeks past, and the market shows no particular tendency either up or down at the moment, as arrivals, although liberal, are well taken up.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras ... 24 24 24 24 24 24
Prime

Firsts...23½ 23½ 23½ 23½ 23½ 23½
Firsts ...23½ 23½ 23½ 23½ 23½ 23½

EGGS.

The usual summer advance has started, taking place much earlier than last year, extras having gone up 3c for the week. Arrivals are still fairly large, but show some decrease, and are expected to fall off considerably in the near future.

Thurs. Fri. Sat. Mon. Tu. Wed.
Extras ...23½ 24 24 25 25½ 26
Firsts ...22 22½ 22½ 23 23 23

Selected
Pullets..21½ 21½ 21½ 22 22 22½

CHEESE.

Monterey cheese is quoted a little higher. Otherwise there is nothing new to report, the demand being about equal to the arrivals.

Fancy California Flats, per lb...13 c
New Young Americas, fancy.....15 c
Monterey Cheese 14 @15 c

At Los Angeles the dairy produce markets for the past week have been as follows:

Wed. Thurs. Fri. Sat. Mon. Tu.
Butter:
Extras..25 24 24 25 25 25
Eggs ...23 23 23 24 24 25
Cal. Cheese:
Flats ..13½ 13½ 13½ 13½ 13½ 13½

Deciduous Fruit.

Local business in the deciduous fruit market is rather quiet this week, but offerings in most lines are by no means heavy, and values are well maintained. The berry market shows an all-round advance, practically everything being in light supply. Offerings of strawberries are very limited for this season, Longworths being too scarce to quote at the moment, and other varieties are bringing from \$4 to \$6 per chest. In tree fruits, pears have been added to the list, the first shipments having arrived from Sacramento. They find a limited demand at the price quoted. Apricots and peaches are more plentiful, but show little change, and plums bring about the same prices as last week. Cherry prices are held as before, with rather limited offerings, though there is little fruit that will bring the top figures. Figs are higher, as arrivals so far have been light. Cantaloupes find a very fair demand, but have dropped sharply, with large arrivals. Watermelons are lower, but still too high for any large trading.

Blackberries, crate 75c@1.00
Loganberries, chest 4.00@ 5.00
Raspberries, chest 8.00@12.00
Gooseberries, lb. 4@ 12c
Strawberries:
Malindas, chest 4.00@ 6.00
Banner, chest 4.00@ 5.50
Apples: Newtown Pippins 1.00@ 1.75
Oregon Spitzenbergs .. 1.40@ 2.00

Apricots, crate 75c@ 1.00
do lugs 85c@ 1.25
Pears, box 75c
Peaches, crate 65c@ 1.25
do basket 85c
Plums, box 50@ 75c
Cherries:
Black, box 75c@ 1.00
White, box 65@ 90c
Royal Anne, box..... 75c@ 1.00
Figs, box 2.50
Currants, chest 6.00@ 9.00
Cantaloupes, crate 1.25@ 1.50
Watermelons, lb. 2½@ 3½c

Dried Fruits.

Since the active movement of a few weeks ago, there has been little doing in this market. There is, of course, no activity in the spot market, as local dealers have practically nothing to offer. A large amount of business has been done in the new crop, but the trade has provided for early requirements, and is not willing to raise prices in order to enlarge its holdings.

A good deal of fruit is still being picked up at the prices quoted, but those who have not already sold are in no hurry, feeling that prices are not likely to be lower than at present. The outlook is good, as Eastern jobbers have had quite a heavy trade in future fruits, and it looks as if retailers would carry larger stocks than last year. Efforts in the East to bear the prune market have been unsuccessful, and values are stiffening up again. The New York Journal of Commerce says: "The Associated Raisin Co. has announced opening prices on 1914 crop layer raisins for October shipment from the Coast at \$1.15 for three-crown, \$1.40 for four-crown, \$2 for five-crown and \$2.50 for six-crown, f.o.b. Coast. A price of \$1.65 has been fixed on clusters in cartons. No selling basis has been fixed on 1914 crop seeded and loose by the Association, but some outside factors are offering at 6@6½c on choice and 6½c to 6¾c on fancy. Buyers appear somewhat indifferent at the moment, though a good deal of business has been put under contract both for old and new crop seeded. Estimates on the coming crop range from 80,000 to 90,000 tons. The carry-over of old crop is figured at upward of 20,000 tons.

"The large packers of California prunes are decidedly opposed to making any concessions from quoted prices on new-crop prunes, and some of them who have been meeting the inside quotations are withdrawing offerings. The bear campaign inaugurated several weeks ago with a view to influencing growers' views seems to have failed of its object, as the orchardists have declined many bids of less than 6c for orchard run and seem determined to hold out for at least that price. Some of them are demanding at least a quarter of a cent more. The leading packers are not trying to force the issue and inform buyers that they cannot accept orders from them on less than a 6c f.o.b. four-size bulk basis for 40s to 60s. On the spot New York the movement in prunes is seasonably slow. Stocks here are comparatively light and in few hands. Having been put into ice-house the holders are reluctant to make concessions from quoted figures even on the largest orders presented.

"There is no change to be noted in the market for spot or future apricots or peaches. The movement of the former into consumption is seasonably slow, but there is no pressure to sell. Futures are steady, but the market is inactive."

Evap. Apples, 1914..... Nominal
Apricots, 1914 9 @ 9½c
Figs: White, 1914 3¼c
Black Nominal
Callmyrna, 1914 4½c
Prunes, 4-size basis, 1914.. 6 @ 6½c
Peaches, old and new.... 4 @ 4½c
Pears Nominal
Raisins (in sweatbox):
Loose Muscatels 4 c
Thompson Seedless 4½c
Seedless Sultanias 4 c

Citrus Fruits

The extreme hot weather, combined with the tremendous heavy arrivals of other fruits and berries, in the eastern markets, caused the orange markets to become generally easier

and lower, although the market opened firm on sound navel stock this week. Navels, Sweets, St. Michaels and seedlings suffered most, as they were selling dead ripe. It is expected that Valencias will do better after the other varieties are cleaned up, although they have suffered somewhat, with other varieties the past week. About 19 carloads of lemons were being shipped daily, last week, the market being in good shape.

Forty-three cars of navels sold on the New York auction, June 8, for an average of \$1.05@\$.320. Nine cars of Valencias sold on the same auction for an average of \$2.20@\$.370. The Philadelphia market opened this week steady, prices on navels averaging \$1.00@\$.265. Lemons in the Philadelphia market brought \$5.40.

There is no real activity in the San Francisco market, and Valencia oranges, which are arriving more freely, have declined a little. Navels are slightly higher, with steadily diminishing supplies, and fancy lemons have been marked up sharply.

Oranges: Navels, box...\$ 1.00@ 2.75
Valencias, box 1.75@ 2.75
Tangerines, crate 75c@ 1.25
Grapefruit, seedless, box. 1.50@ 2.50
Lemons, box 2.75@ 5.50
Limes, case 9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

Since the recent sales of new almonds to eastern buyers, little business has been done, as the local trade is in no hurry to place contracts. There is still some uncertainty as to what prices will be on the bulk of the crop. There is nothing new in walnuts.

Almonds, 1914 crop:
Nonpareils 17 c
I X L 16 c
Ne Plus Ultra 15 c
Drakes 13 c
Languedoc Nominal
Hardshells Nominal
Walnuts, new crop:
No. 1 Softshell Nominal
No. 1 Hardshell Nominal
Budded Nominal
No. 2 Nominal

HONEY.

Values are easy, but not notably changed. Receipts in the local market have been quite large, with liberal offerings at shipping points, while the demand here is decidedly slack.

Comb: White 12 @13 c
Amber 10 @11 c
Dark 8c
Extracted: White 7 @ 8 c
Amber 4½ @ 6 c
Off Grades 3 @ 4 c

BEESEWAX.

Offerings are light at present, and values are well maintained, all available supplies finding a fairly good market.

Light 30 @33 c
Dark 28 c

HOPS.

No large movement is reported at present, as there is still some uncertainty about the crop, and neither growers nor buyers are very keen about making contracts. The Sonoma crop is said to be showing up very poorly, though the outlook in other sections is good.

1913 crop 15 @17½c
1914 crop 14 @15½c

Live Stock.

Beef cattle have been marked down a little this week, as shipments are increasing somewhat, and the demand is limited. The demand for feeders in the country, however, is still heavy. Hogs are moving slowly, and prices are lower. A decline is also noted in dressed beef, veal and hogs.

Steers: No. 1 7 @ 7½c
No. 2 6¾ @ 7 c
Cows and Heifers: No. 1...6 @ 6½c
No. 2 5¾ @ 6 c
Bulls and Stags 3½ @ 5 c
Calves: Light 8½ @ 9 c
Medium 8 @ 8½c
Heavy 7 @ 8 c
Hogs: Grain-fed, heavy...8 c
150 to 250 lbs. 8¾c
100 to 150 lbs. 8½c
Prime Wethers 5½ @ 5¾c
Ewes 4½ @ 5 c
Milk Lambs 6 @ 7 c

DRESSED MEATS.

Steers 11½ @12 c
Heifers 11 @11½c
Veal, large 13 @14 c
Small 15 @15½c
Mutton: Wethers 11 @11½c
Ewes 10 @10½c
Suckling Lambs 13 @14 c
Dressed Hogs 13½ @14 c

WOOL.

Most of the California wool has been disposed of, but a few odd lots are still held in the country. There is a decidedly firm feeling as to values, but the prospect of further advance seems rather doubtful. A large sale in Oregon last week, however, brought unusually high prices.

San Joaquin 12@14c
Humboldt and Northern...16@21c
Calaveras 14@18c

HIDES.

Values show a slight advance, and the market is extremely strong, with a heavy demand and no surplus stock anywhere.

Heavy Steers, over 56 lbs.15 @15½c
Medium 15 @15½c
Light Steers, under 48 lb. 15 c
Heavy Cows, over 50 lb. .15 @15½c
Light Cows, 30 to 50 lb.14½ @15 c
Kip 15½ @16 c
Veal 13 @19 c
Calf 18 @19 c

Dry—
Dry Hides 25½ @26½c
Dry Kip, 10 to 15.....24½ @25½c
Dry Veal, 5 to 10.....29½c
Dry Calf, 7 down.....29½c

Horse Hides—
Salt: Large\$3.00
Medium 2.50
Small 1.00

HORSES.

There is little feature to the local horse market. No large shipments are coming in, and business is limited to private sales, at which prices are very irregular. The demand is unusually light, either for draft or lighter stock, this being probably a reflection of the dullness in general commercial lines, causing a shrinkage in the amount of hauling to be done. With lower prices for hay and feed, however, a better demand is expected with the first revival of general business. It is doubtful, however, whether this will be felt in the local market before fall.

Heavy drafters, 1700 lbs. and over\$275@325
Light Drafters, 1500 to 1650 215@230
Chunks, 1350 to 1500.....190@210
Wagon Horses, 1250 to 1350..150@200
Green Mountain Range.....120@140
Delivery Horses, 1050 to 1250 100@125
Desirable Farm Mares.....75@100

MULES.

1200 lbs.\$200@250
1100 lbs. 150@200
1000 lbs. 125@175
900 lbs. 75@125

SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., June 8, 1914.

The height of the apricot season is passed and shipments from the Winters and Vacaville districts of apricots will be very light from now on. Suisun, however, expects to market about 25 to 30 cars commencing today. The San Joaquin Valley shipped a few cars of cots this season with fair results; the quality, however, was not to be compared with those from Vacaville and Winters.

Alexander peaches are cleaning up fast. Triumphs are now in on the market and St. Johns will be moving within a few days. Clyman plums are practically cleaned up; Tragedies are moving; Burbanks will be rolling by Friday or Saturday. A few crates of this latter variety, however, have been moving for the last few days from Vacaville, but they should not have been shipped as they were small and green and lacked sugar. Certain varieties of Japanese plums are dropping heavily in all districts; this is particularly noticeable with Santa Rosas.

Over 3000 tons of Bartlett pears have been purchased on the Sacramento river by the canners at \$50 a ton. As this will considerably reduce the shipment of Bartletts east, it will have a strong tendency to hold up the

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market to a price equal to that paid by the canners. This price is equal to about \$1.15 net and will require at least \$2.50 delivered for the packers to break even at the canning price.

The Santa Clara valley is still shipping cherries, but other districts are about cleaned up.

The late rains in the Sacramento and San Joaquin valleys did little or no damage except to hay and grain farms.

The movement of tree fruits this week will be heavy, the growers in a good many instances demanding that their shipments be forwarded to auction markets.

We do not like the tone of the market; the demand is sluggish on certain varieties, and, as advised you two weeks ago, there is a noticeable fluctuation that is very active and unaccounted for.

There is a heavy movement of cantaloupes from this state and Georgia is now shipping peaches in carlots. This, together with the heavy receipts in the eastern markets of pineapples and bananas with a large shipment of cherries from the northwest, will have a tendency to bring about only fair prices, and it is unreasonable to expect anything out of the ordinary.

We predict a sluggish market on peaches with a fair market on plums and pears. It is too early to forecast prices on grapes though some shippers are offering to supply season's packs of double cleat Tokays at 65c. f.o.b. Judging from the present prospects for a heavy crop of Malagas and Tokays, this is, in our judgment, a very good price. We look for it to drop considerably lower if the crop harvested is as heavy as present prospects would indicate.

The markets for the past week ranged as follows:

New York: Tartarians, \$1@1.25; Annes, 70c@\$.170; Biggareau, \$1.11@1.77; Royal cots, \$1.75@3; Newcastle cots, \$1.70; seedling cots, \$1.70@2.37½; Clymans, \$1.40@2; Alexanders, \$1.20@2; Bings, \$1@1.80; Oregons, 70c@\$.135; Lamberts, \$1.45; Republicans, 84c; Rockports, 73c; Formosa, \$3.15.

Chicago: Tartarians, 96c@\$.116; Annes, 60c@\$.147; Biggareau, \$1.02@1.36; Royal cots, \$1.40@2.07; Newcastle cots, \$1.47; Seedling cots, \$1.40@1.56; Clymans, \$1.49@2; Alexanders, \$1.05@1.88; Bings, 35c@\$.208; Oregons, 70c@1.36; Republicans, \$1.24; Centennial, 56c@93c; Mayflower, \$1.65; Gov. Wood, 81c.

PUBLISHER'S DEPARTMENT.

This office has certainly presented a busy scene during the past week owing to the receipt from the printers of the seventh edition of "California Fruits" and the filling of the large number of orders which had accumulated during the past two months. Besides going into nearly every county in California, we had orders waiting for many Middle Western and Eastern states and also foreign countries, including England, Australia, Switzerland, Japan, Chile, and Palestine. Without considering this work being in its seventh edition, the above facts will show its great popularity among fruit-growers all over the world, and everybody engaged in that occupation should have a copy. See advertisement on back page of this issue.

Our field men report that owing to the rain last week, they were unable to put in full time, but notwithstanding sent us 228 new subscribers, which,

on the whole, was very satisfactory and helpful in our efforts to make the PACIFIC RURAL PRESS the greatest farmer's journal in the West.

There has just reached this office a copy of "The Business of Farming," a new book by Wm. C. Smith, author of "How to Grow 100 Bushels of Corn on Worn Soil." The book deals with every phase and feature of the farm, from the dawn of creation down to the present time. It contains 290 pages, is well bound and handsomely illustrated. Published by the Stewart & Kidd Co., Cincinnati, Ohio.

There are still many of our subscribers who have not yet obtained a copy of Prof. Wickson's new book, "One Thousand Questions in California Agriculture Answered," but many of those who have a copy write us very gratifying letters regarding its value to the farmer. By the way, we have an offer to make our paid-in-advance subscribers. Write for it.

DIRECTORS OF HORSE ASSOCIATION MEET.

The directors of the California Horse Breeders' Association met at the Palace hotel, in San Francisco, June 8, at which time they laid plans for increasing the membership of that Association and other points which will further the interests of the draft horse in the State. With that end in view, the secretary was instructed to send a copy of the by-laws and constitution to all owners of draft stallions in the State, together with a membership card which is to be filled out and mailed to the secretary, J. I. Thompson, Davis, Cal., with the yearly dues of \$5.

Steps were also taken to have printed matter sent out, urging fall colt shows in every district of the State where heavy horses are raised. The matter of county aid at the Panama-Pacific Exposition was also taken up, and at the suggestion of D. O. Lively, who was present, the supervisors of the various counties will be asked to appropriate a sufficient amount of money to duplicate all premiums received by horses from their counties as awarded by the judges at the Exposition.

That the Association expects to be a factor in all that pertains to the horse in the future was demonstrated by their appointing a committee to confer with the directors of the State Agricultural Society in regard to the horse judge at the coming State Fair. In case a judge has not already been selected, a number of names will be submitted by the committee for the Agricultural Societies' preference.

This Association appears to be a live one and all owners of stallions should take immediate steps to lend their moral and financial support by sending their applications and dues to the secretary.

Many of our readers who responded last winter to the call made through these columns should take this matter up at once, as well as all others who will be benefited by the organization.

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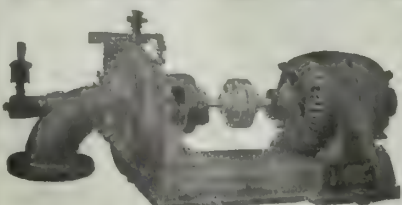
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THE PACIFIC RURAL PRESS

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SAN FRANCISCO, SATURDAY, JUNE 20, 1914.

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FROM CITY TO POULTRY.

[Written for the PACIFIC RURAL PRESS.]

From operating a linotype machine in the office of the PACIFIC RURAL PRESS to operating a combined chicken and fruit ranch at Corning, in the Sacramento valley, E. J. Lawrence changed from anemia to sun-browned health, from dissatisfaction to a resolve that he will never change his present occupation except to make improvements in it. We tell his story to show how others may realize their fond ambitions of "back to the farm."

Not the least cause of his satisfaction, nor the greatest, is that he may drink pure cream if he wants it, his wife uses fresh butter in cooking, no eggless cakes go on his table, and from the loquats and cherries of early May to the big black Morocco grapes at Thanksgiving he has fresh fruit to spare for neighbors and the friends who come out from town at week-ends. And he has fresh hen-fruit by the dozen all the year round.

Mr. Lawrence knows now what it is to really live; he thought he was living when he was spending his salary as fast as he earned it, but now he knows better.

Around the roomy home is a riot of flowers and fruit. Roses and palms and flowers are everywhere. Trumpet vines and English ivy cover the porches, inviting humming-birds and surcease from worry. The flaming pomegranate trees bear fruit which Mrs. Lawrence makes into jelly, too good to talk about except that the apple-quince first flavor leaves a delightful aftertaste different from all other jelly. If weather gets hot or company comes, they may pick lemons fresh from the tree at any time of year, and oranges on the trees are usually available.

Three years ago Mr. Lawrence owned a vacant lot in Berkeley, to improve which he tried in vain to get capital. He traded the lot for the ten-acre ranch and a mortgage at Corning, quit his job, borrowed money to get moved to his ranch, and for three years has stretched his credit, sometimes as much as \$500 on running expenses, has worked 14 months away from home setting type, mostly in San Francisco and for the legislature at Sacramento; saved \$700 in that time, aside from the poultry and fruit income from the ranch. That has paid the mortgage and what he borrowed. There are 1100 alert business hens, with 300 more growing up. He hopes to work up to 5,000 some day and drop the five-acre fruit part of the ranch. Among the fruits are 250 olive trees, about a dozen years old, from which, through the Corning Olive Growers' and Producers' Exchange, of which he has been secretary, he hopes to market \$1,000 worth of ripe olives this year. Hoary old fig trees ripen enormous crops, which dry on the tree and make feed for the Jersey cow. Enough are saved for home use, dipped into boiling 20 per cent brine, and packed. The boiling kills possible insects, the salt brings out the sugar and flavor. Mulberries, pears, apricots, and quince trees are

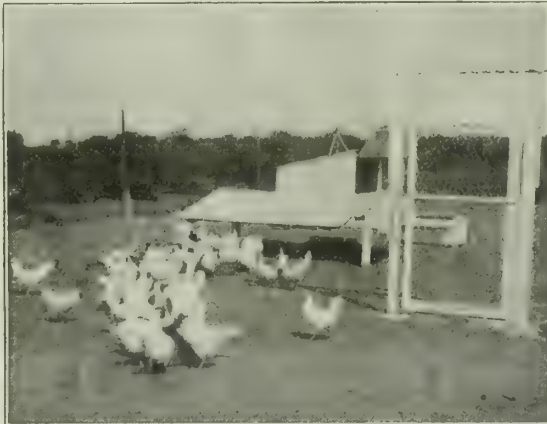
set promiscuously about the place. Every rancher should have one black Morocco vine, which bears big bunches of fine flavored grapes an inch in diameter, from July to November. Concordos do little for Mr. Lawrence. Thompson seedless are dying out from between the orchard trees. Two years ago he cut back six prune trees severely, leaving others in the same bunch unpruned. The six yielded three boxes per tree; the others one box per three trees.

Almonds along the fence row seem to have done better because he cut them back in the winter. His Royal apricots are fine, but he blames sour-sap for the falling of other varieties. The original apricot planting did not pay well, so Muir peaches were grafted. About 50 are left, the fruit from which is dried on small trays handled by himself alone.

But you can't get Mr. Lawrence to talk much about fruit, because he is in love with those chickens. He buys all the dry feed and raises chard. They run pretty well all over the place. For the year 1913 he had an average of 350 hens. The net profits by months for that year from eggs were, beginning with January, \$44; February, \$42; March, \$31; April, \$50; May, \$55; June, \$23; July, \$21; August, \$27; September, \$33; October, \$20; November, \$31; December, \$26; total, \$403. In November he sold one case for \$16.85. Feed for April, 1914, cost \$43. Eggs for April, 500 dozen averaging 19 cents, sold for \$95, over 100 per cent profit. He knows these figures, for each day's yield and sales and feed bought are entered in a strict account with the Leghorns so simply that a glance shows the whole thing.

Strict culling is practiced. "I cure disease with the ax. Hens must look healthy around here." For April, until the 25th, with 400 hens, an average of 205 eggs were gathered. That night he culled out 30 and for the remaining five days of April the average was 210 per day. On May 2, he culled 30 more and got 215 the next two days and probably thenceforward. Young cockerels are sold for broilers so soon as their combs distinguish them from pullets. The first hatch from one of the two 400-egg incubators came off in February. Those pullets will begin to lay in July. They will not learn to be scared, for Mr. Lawrence always whistles or sings at his work and won't have a non-whistling boy around his poultry. They know when he is coming and are not startled.

The hens are housed in barn, boxes and hen-houses of various styles, in experimental effort to determine the most satisfactory shelter. Experience with wooden and concrete brooder houses has decided him to build a concrete hen-house, 16 by 50 feet, from the gravel on his own place. A 10-foot section at one end will be partitioned off and movable perches put in. No drop-boards or canvas curtains for windows will be used, for they harbor ticks, which are troublesome here. Lice and mites do not bother, but could be easily fixed in a concrete house by fumigation. The rest of the house will be used for nests and feeding in the litter, which will be a foot deep.



Good Feeding of Poultry Pays Well.



A Flock of Money Making Leghorns.

(Continued on Page 703.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 16, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date	Normal to Date.	Maxim.	Minim.
Eureka.....	.02	36.42	45.73	56	46
Red Bluff.....	.00	33.33	24.89	104	54
Sacramento..	.00	20 08	20 09	90	52
S. Francisco..	.00	29 46	22.16	72	50
San Jose.....	.00	19.18	16.79	86	44
Fresno.....	.00	10.99	9.68	94	50
Independ'ce	.00	12.01	9.53	88	46
San L. Obispo	.00	31.20	20.51	78	44
Los Angeles..	.00	23.64	15.64	80	52
San Diego.....	.00	9 82	10 01	70	56

T means trace.

The Week.

Upon another page may be found the best review of the fruit outlook, up to the close of last week, which we can make with the aid of hundreds of residents in the various districts and who are expert lookers in this line. It is of course too much to expect that such a gathering from unorganized observers should be in all respects just right. It may, however, be regarded as much more valuable and dependable than anything which may be whispered in your ear by those who may be trying to push you onto the bargain counter. It is of course wrong that a state should be obliged to take its information on current products from voluntary observers and delude itself with the idea that it provides for statistics by constituting "statisticians" and giving them nothing to work with. No doubt Judge Shields has his eye on this California situation on agricultural statistics, which would be laughable if it were not so serious. If we are to have a "State Department of Agriculture," as hinted last week, let it have complete, correct and intelligently presented statistics of California agriculture for a corner stone.

The advantage of having even outline knowledge, when desirable detail is not available, is seen in the prices at which prepared fruits are selling or being contracted for. So far as we can see, the good prices are justified both by the probable distant demand and by the local supply, which can now be regarded as visible. Shippers are anticipating reduced shipments of standard mid-season fruits because canners are bidding so actively for them.

Apricots, pears, prunes, are all in the aeroplane and though peaches are perhaps too heavy for sailing, canners are paying prices for preferred varieties which will yield a profit and dried peaches, which were so dumpy last fall, are now showing better speed. Early plums have been selling well at the last and we see no reason why they should not continue the habit later. So far as fruits go at the east we shall proceed upon President Wilson's assurance that there is nothing but a "psychological depression of business" on the other side of the continent, and our notion is that this sort of depression may bear down stocks and bonds without causing people to neglect their appetite. At all events, we are going to call another president into council for President Isidor Jacobs of the California Canneries Company who has been making an extended trip through both the United States and various European countries in the interests of California canned products, says "he sees a tremendous future for canned goods with the opening of the Panama canal." And we shall hold Mr. Jacobs to be a Johnny-on-the-spot prophet, for the Panama canal has opened! The steamer Ancon, 9000 tons, passed through the Gatun locks on June 11 to Gatun lake. She made the round trip, passing out to the Atlantic in one hour and fifty-three minutes. The Ancon is the biggest ship plying on the isthmus.

And so while the fruit is ripening we can dream in the California sunshine of the fast-coming day when the California-built battleship, "The Oregon," shall steam through the canal, with Captain Clarke and Col. Roosevelt on her prow, declaring to the nations that the canal and California are open to the world!

The Eight-Hour Day.

We are receiving a number of very pointed and interesting communications from readers on the relations of the proposed 8-hour day to farming. The pressure of matter from the Fruit Growers Convention makes it necessary to delay a little in presenting them, which we hope the writers will pardon. There will be on the whole no loss, for the subject will be alive until November next when we hope it will be made as dead as a mackerel by popular vote. As, however, the subject will have several months run we shall hope to get to the light, all that readers care to write about it, pro and con. We have such confidence in the judgment of our constituency that we do not hesitate to publish any reasonable view which is respectably presented by anyone who has a right to speak in our RURAL family council. We lamented last week the gingerly way in which the common newspapers are handling the subject. If we are doing them injustice we regret it. Certainly there is one popular journal which has "ginger" and not "gingerly"—for noun and adverb have, apparently opposite meanings—and that is the Oakland Tribune, which freely advises its readers not to vote for the amendment because "it is a rigid law that would make of every farmer, every stockman, every orchardist, a criminal simply because he is endeavoring to conserve something that means lasting good to the entire commonwealth."

That is clearly the public interest in the matter and when it is fully recognized, as it will be before November, this shadow on our farming development will disappear. The organization

of farmers into a "protective league", which was started at the Davis convention, to meet this form of injustice to agriculture, is proceeding rapidly. It is not doing "class work" for farmers; it is working for the freedom of men and women and for the general progress and prosperity of the State.

Study Farm Credit.

It still looks as though Congress would break away before President Wilson can get any farm credit measure through it; in fact it seems doubtful whether even anti-trust legislation will pull through. We expect it will, however, because Mr. Wilson is not easily put aside. As for farm credit legislation we do not particularly regret the delay. A new Congress will be elected this fall and if our farmers go to work to inform themselves and each other what they really desire in this line for the good of the whole people, they can put the matter up forcibly to those who will stand for their votes next November. We are aware that many of our readers have been too busy to give the subject the close attention necessary for an understanding of the fundamental considerations involved in it and to such we have a suggestion to make which appeals to us as most direct and practical. Dr. T. N. Carver, director of the Rural Organization Service of the United States Department of Agriculture has just written a "Farmers Bulletin" of 14 pages entitled "How to use Farm Credit." It can be had free by writing to the Secretary of Agriculture at Washington, D. C. It is not, of course, a treatise on the subject; it is rather a primer of elementary principles which will enable the reader to start right toward borrowing for his own use or toward organization to make money available to all who will make right use of it. It explains why the belief that a farmer should never borrow is wrong; also why free borrowing for all purposes is also wrong. It discusses all such questions from the point of view of economic science, in which Dr. Carver is a master workman. It states clearly the basis of agricultural credit and how it is made available, also how the plan of amortization works out in practice. We cannot too highly commend this little pamphlet as a beginning of study of the subject and we hope all our readers will send for it.

The Atascadero Colony.

The colonizing and development enterprise in the well known Paso Robles district of San Luis Obispo county has now attained a stage of progress which must command public attention. This writer has not spoken of it before in this place because he has been serving as one of a group of advisors to the project. A second reason for reticence on this subject is found in the fact that the Atascadero undertaking was planned and promoted as a part of the work of the Woman's Republic, which is perhaps the greatest fully articulated association of women in the United States and members of this association were fully informed of the enterprise through its regular organ, the Woman's National Weekly of St. Louis, and, so far as we have observed, no announcements have been made in other journals. The enterprise was largely, therefore, a family affair of the association and its membership and its plan and procedure to be judged alone by the constituency which belonged thereto. The

reason why the outside public must now pay attention to it is because it has demonstrated itself to be the most unique in its design, and in its popularity, of all the subdividing and home-making enterprises which have ever been projected in this State and perhaps in the world. Last week there was a six-day convention on the property at Atascadero attended by about 500 people from all parts of the United States—all of whom had invested considerable amounts in the enterprise and assembled to view the property and the notable improvements now under way. They were comfortably lodged and otherwise provided for in a tent-city and were outspoken in their satisfaction over the California home which had been selected for them. Many of them were representatives of friends and relatives who delegated to them power to purchase for them, if observation justified the investments. This power was freely exercised and we judge that not less than 3000 families have entered upon the prescribed course of securing homes upon the property, either through residential or producing subdivisions, as the plan provides. We are aware that such a statement is fairly startling as the attainment of about a year's actual promotional work. It is intelligible only on the basis of organization, covering the last decade or more, during which the officers of the Woman's Republic have so commended themselves to their constituents by profession and action, that faith in the project is but the fruit of interest and confidence which have been long growing. Aside from this faith in the motives and methods of the projectors, several influential factors are operating to enlist the active participation of several thousand people in the undertaking, viz: desire to live in California; desire for a home in the midst of people holding similar views and aspirations; desire to avoid roughing-it as pioneering settlement ordinarily requires; appreciation of the desirability of a home where public utilities, culture-institutions and entertainment features are to be installed in advance of home-building, instead of waiting decades perhaps for their development; recognition of the desirability of the situation—for climatic conditions: picturesque beauty, and productive capacity, as demonstrated by the success of old settlers on adjacent lands; for accessibility, the tract being on the coast line of the Southern Pacific and traversed by the State Highway, while across a protecting ridge on the west, the landings on the Pacific ocean are but six miles away. Underlying all these are the expectation of immediate development of industrial enterprises and the realization of a "civic center," of which buildings are now in construction on a scale of size, beauty, and cost superior to any in California, outside of the three greatest cities of the State. The lands of the colony cover 23,000 acres of which probably two-thirds, exclusive of roads and parks, are naturally suitable for planting and will be immediately planted to fruits and other crops to which they are adapted.

Possibility in Rabbits' Tails.

Readers who are harried by jack-rabbits in their orchards may be encouraged to new effort to de-tail them by an account which an esteemed English investigator sends us of a meeting recently held in Hereford. One of the speakers said that they are growing "many

pears which apparently depend upon cross-fertilization. In Kent the pollen is conveyed from one tree to another by boys by means of a rabbit's tail tied on the end of a bamboo cane; this was being done on quite a large scale." The account does not say how the pollen is secured to put on the rabbits' tails, but perhaps the blooms of the pollinator are first brushed over. It seems a very good method for dwarf trees which a boy can reach with a cane. In California, however, some attention might be paid to causing the jack-rabbits to jump over the proper trees in succession and shake their own tails.

A Canine Conceit.

The foregoing paragraph suggests to us that perhaps we have some talent for the art of nature-faking which we should develop by starting a menagerie department in these columns. We must doubt, however, whether we can successfully compete with the old masters in this line. For instance the United States Department of Agriculture, in its strenuous effort to convince wool growers that it is their own fault if they cannot prosper without the tariff on wool, has just made a publication entitled "Dogs and the Mutton Supply." It surely surpasses in suggestiveness any theme we can think of to preach from.

Queries and Replies.

Querists must submit full names and addresses.

Army Worms.

To the Editor: I am mailing a sample of worm which is a pest in alfalfa fields in this community. Alfalfa will not grow because of these pests. One of my fields has now been cut six weeks and still makes no showing. Ordinarily a second cutting would now be ready. For an idea of the quantity of these worms, will state that most of those in the box were found in a two-foot square space. These worms work during the night and lie dormant in the shade during the day.—J. W. B., Gilroy.

They are army worms. The box looked as though it might have held a pound, but the postmaster could only deliver a few, because the rest started for Mexico as soon as the box was broken in the mail. The best way to protect alfalfa is to spread swaths of straw on the side to which the worms are coming—burning and re-strawing as others approach. When they get into alfalfa they are hard to catch up with. You can poison them by spraying the alfalfa as you would a tree for codlin moth; or, if you are afraid of the poison, straw it over lightly and fire it. This will bake the worms, but not hurt the alfalfa roots. Or you can graze it off with sheep or hogs. The worms you sent are about sheep and will soon go into the ground. You can get a lot of them in the pupa condition by disking the alfalfa.

Polycan Confertus.

To the Editor: Under separate cover I send a prune twig with a dark-brown boring beetle about half an inch long on it. Can you give a short history of him? Is he likely to do much damage, and is there any control? The beetle is hard to find, but the work is easily seen when the twig dies. I find them in a prune and in a peach orchard a half mile apart, also in a mulberry tree.—A. J., Gridley.

The insect is *Polycan confertus*. It is a

native insect, but was given a common name, "olive twig borer," thirty years or more ago, because it was first noticed on olive trees. It lives naturally in manzanita and other wild shrubs and trees, but it takes to nearly all kinds of fruit trees. It breeds in rotten or dead wood, but seems to like to feed on living wood and always goes downward some distance after starting at a bud. It is never numerous enough to do any particular harm to bearing trees, but may do harm by boring branches on a young tree which you wish to keep for the shape of the tree. It could probably be killed by spraying with arsenate of lead so as to keep the poison at the base of the buds on young trees, but it is not numerous enough usually to warrant the cost.

Alfalfa and Corn.

To the Editor: What is the best crop sown in the fall to plow under in spring? The ground is clay. It has been in alfalfa about five years and pastured most all the time so there is no alfalfa left. I wish to try corn on it next year and seed back to alfalfa.—B. J. B., Orland.

You can get most winter growth with rye and pasture it down somewhat before plowing under in March. Then disk or cultivate to clear the land and hold moisture for the corn which will be planted after frost danger is over. Be sure to plow in the stuff early, for much of the success of the corn depends upon that. Allow us to suggest, however, that, unless you want the corn very much, it might be better to summer fallow now, working the land several times before the rains and re-seed to alfalfa this fall or winter.

Replanting Apples and Pears.

To the Editor: I have taken out an old orchard on my place, and desire to set it out again. Would it be advisable for me to set pears and apples again in the same soil?—W. B. L., Sonoma.

It is practicable to do as you propose providing the soil is good and suited to apples and pears as shown by the behavior of the trees you removed. It would be better to manure well and run the land in alfalfa, beans or peas for two or three years or even to some other cultivated crop with deep plowing but it is not necessary to do so. Get out all the old roots you can and plant the new rows midway between the old rows, if the old distances were right.

Summer Forage.

To the Editor: I wish to grow a summer hay crop for dairy cattle, upon irrigated mesa land, levelled for flooding. Which would be grown to advantage, kaffir corn, sugar cane or millet. How much should be broadcast and when cut? Could I grow mixed with cow peas to make more balanced ration?—R. H., Riverbank.

Kaffir corn or some other sorghum, if any has demonstrated superiority in your district, will give you most summer feed. It can be broadcasted at about 60 lbs. to the acre and cut with a mower when the stems are a quarter to half an inch in diameter. Better results are usually obtained by sowing in drills, 2½ to 3 ft. and cultivating for a time. This takes about one-quarter as much seed. Cow peas require more water than sorghum and better results can be had by growing in checks by themselves, but the growth can be fed together.

The California Walnut Growers' Association.

[Address of CARLYLE THORPE, at State Fruit Growers Convention.]

After giving an interesting history of the walnut industry and explaining in detail the early troubles of the association Mr. Thorpe said: "The California Walnut Growers Association was organized by a number of representative, individual walnut growers, as a co-operative, non-profit marketing organization without capital stock.

"Fifteen of the local walnut growers associations immediately contracted with the California Walnut Growers Association, for the marketing of their output but subsequently other associations did likewise, until at present the California Walnut Growers Association is handling the marketing of seventeen local associations out of the twenty walnut growers associations in California, and is marketing about 65 to 70% of the total walnut crop of this State.

"Each local association is entitled to one representative, as member of the central association, but the voting power of members is unequal, each member having one vote for each 100 tons or major portion thereof, which the association he represents ships annually. The members have regular meetings, four times a year, at which meetings the general policies of the Association are discussed and to these meetings the local associations are invited to send up to five delegates, although only the one who is a member of the central association may actually vote. There are sixteen directors of the California Walnut Growers Association, every important walnut producing district being represented on the board. Directors meetings are held monthly.

"For the first two years of its organization the California Walnut Growers Association continued to market its output through coast brokerage houses, paying a brokerage of 5½ to 6%, almost one cent a pound. While this system seemed the most practical while each local association had to market its own relatively small output, it became apparent that with the immense tonnage the central association controlled, through its marketing contracts with the seventeen local associations, it would be much more economical to establish our own marketing organization. Thus our sales department was established early in January of this year. We have been successful in finding a market for our entire estimated output of the 1914 crop and have been refusing all business offered us since May 2. It is estimated that we will save the local associations, for which we market, over \$50,000 annually by this change in our marketing system.

"Since the organization of the California Walnut Growers Association, less than three years ago, we have inaugurated a number of important changes in the walnut industry amongst which are the installation of a statistical department, through which we gather valuable information relative to the size, quality, time of shipment, markets, etc. of foreign walnut crops; maintaining salaried agents in the principal foreign producing districts. The information we thus gather is invaluable to us in the establishment of a proper price which will move our crop in competition

with the imported walnuts; we have adopted systematic methods of distributing the product throughout the country's markets; eliminating the old unavoidable practice while marketing through the large coast brokers, of glutting certain markets with early walnuts while others were bare, by a system of furnishing practically all our trade with a very early supply of walnuts as a partial delivery, and then keeping them in a constant stock throughout the heavy consuming period, thus increasing consumption; we have established higher standards of grading and packing, thereby insuring the consumer a high class product; we have protected the jobber by giving him a guaranteed standard of pack, which must set out the minimum of good sound merchantable nuts any delivery must run. Our sales are made at a uniform price, established by us for each grade at the commencement of harvesting season and by guaranteeing these prices against our own decline, we have gained the confidence of the buyer. By inaugurating our own sales department, we estimate that our former marketing cost will be cut almost in half and owing, in no small measure, to these developments we are now making the grower a reasonably satisfactory return, while the consumer is securing a better article at no increase in price. The grower is now receiving the middleman's former profits.

"At present we are distributing our goods in forty-four of the forty-nine states, and supply 280 jobbing centres through 721 jobbers. We sell to the wholesale trade only. We are constantly working toward the improvement of our grade and pack, it being our endeavor to make the Diamond Brand, under which we ship all our first-class goods, stand for the highest grade of walnut obtainable anywhere.

"The walnut industry in this state is slowly but constantly increasing. A normal crop is now over 25,000,000 pounds. The average consumption of the United States, however, is over 60,000,000 pounds so there are obviously opportunities for the further development of this industry, and in my opinion it is only a question of time until there will spring up large and profitable walnut districts to the north of southern California. I also believe the grower would receive just the same, if not a better price, if the California production were increased 50 to 75 per cent."

PRUNE TOP GRAFTS.

[Written for the PACIFIC RURAL PRESS.]

Those who top worked fruit trees last winter will soon find that the grafts which grew are getting too long for safety. They are not yet strongly united to the stock, and a little whipping by the wind will break them out. The graft will then be lost and if it is the only one that lived, the stub will also die.

In Placer county they top back the grafts in July, to avoid the August wind and to make them stocky and well branched, low down, so that the weight of fruit in future years will not have so strong a leverage on the union.

A new graft grows around a stub

and over it, but never unites with the old wood. Its union is by means of the new bark around the old wood, so that the less leverage the future top has, the less likely it will be to break loose.

Millard Sharpe of Solano county had to thin Beauty plums about May 10 from buds, inserted on old trees less

than two years ago, to save them from breaking out. Grafts one and one-half years old were also bearing too heavily. It is best not to allow this because on a vital union, now being made, depends the fruitfulness of the tree, and all the sap had better be used to lay a good foundation for fruit bearing.

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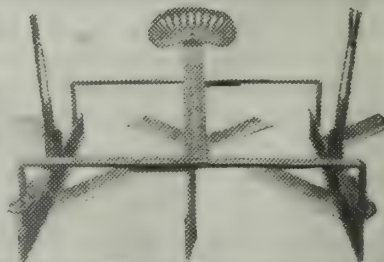
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Good and Bad Oranges and Orange Trees.

(Concluded From Last Issue.)

[By A. D. SHAMEL, of Riverside, at the Fruit Growers' Convention at the University Farm.]

TYPE CHARACTERISTICS.—One of the characteristics that differentiate citrus types is the habit of tree growth. For instance, the so-called Australian type of the Washington navel orange has the well known upright habit of growth as well as a more rapid rate of growth than other types of this variety. The so-called shade-tree type of the Eureka lemon has a peculiar spreading habit of growth that identifies it clearly, and, as in the case of the Australian navel type, it stands out so markedly that the trees of this type can be seen from a distance. The seeded type of Marsh's seedless grapefruit trees have a drooping habit of growth that, once recognized, is unmistakable. The barren type of the valencia orange trees have a peculiar fine branching arrangement and dense habit of growth that is very characteristic, as is the case with the barren type of navel orange.

The color of fruit is an important distinguishing type character, as, for instance, the Yellow Navel, the reddish color of the Thomson navel, the striped appearance of the variegated lemon, the yellowish green color of the rough type of the valencia orange and many other instances of similar characteristic type color of the ripe fruits.

The shape of fruit is an interesting type marking, as in the case of the egg shape of the Standard Washington navel fruits in comparison with the pear shape of the Golden Nugget type, globular shape of the Yellow Navel type, and the flattened wrinkled shape of the common Australian navel type fruits.

The size of fruits is another type characteristic, as for instance the standard, ivory-white, Marsh's seedless grapefruit type in comparison with the large seeded type of this variety.

The texture of the rind of fruits is another important type character, as in the case of the rough-ridged valencia type in comparison with the wrinkled type, the standard type and the very smooth small fruit valencia orange type. Also, the corrugated navel type in comparison with the ribbed, the smooth Thomson, and the coarse rough Australian types.

The number of seeds is still another most important type character, as in the case of the seeded Marsh's seedless grapefruit type having from 50 to 60 seeds in each fruit, and the standard type having but one or two seeds per fruit. In all the types of the varieties under observation we find seedless types and seeded types, the average number of seeds being a clear-cut type characteristic.

The time of fruiting varies according to type, as for instance some types of Eureka lemons bear fruit ready for picking in the fall, others produce their crop in the spring and summer, while other types produce fruits all the year.

The thickness of rind, amount of rag, sugar and acid content, and amount of juice, flavor and other characteristics we find to be correlated with type characteristics.

By all means the most important

type character is the amount of production. Production we have found to be correlated with types in all varieties, some being characteristically large and others small bearers. In the orchards under observation, the elimination of all unproductive types and a substitution of the productive types would mean an increase of 100% in production and a corresponding improvement of the commercial quality of the crops.

We have found, as a rule, that the heaviest producing types produce the best and most valuable commercial fruits. The importance of this discovery can readily be appreciated by all growers.

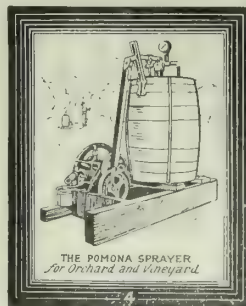
PERFORMANCE RECORDS.—There are two kinds of citrus performance records in use, one the scientific and detailed records for the purpose of study, and the other the practical records used in orchard management. In the scientific work the forms for record-keeping have been worked out with great care for each variety, and have been modified and improved as our knowledge of the subject developed.

The practical citrus performance record forms are based on the facts of the amount of individual tree production and notes on the commercial quality of this product. The experience of citrus growers who have adopted citrus-performance record work and who have used it for one or more years justifies a recommendation for the general introduction of individual tree records. The selection of any particular method of methods will depend upon circumstances. In any event, the method selected should be carefully considered, preference being given to the adoption of a method which has been tried out successfully.

TREE NUMBERS.—A comprehensive method of individual tree numbering is absolutely essential to successful performance record work and individual tree study. The method used in our performance record work is as follows: Each tree is given a number consisting of the number of the plot, the number of the row in which the tree occurs, and the number of the tree in the row, always counting from a fixed starting point, as for instance the point nearest the source of irrigation water. The number of a tree located in plot 3, row 14, and tree 17 in the row would be 3-14-17. This number is painted on the tree trunk, with pure white lead paint, after the dust has been brushed off the bark where the paint is to be applied. The arrangement of the numbers can be suited to tree conditions, as for instance in small or nursery trees it can be arranged vertically, a single number in a place, in regular order down the trunk. Usually we have painted the number with a small camel's hair brush, always at comparatively the same position on all trees. The numbers should be clear cut, plain and unmistakable.

It has been found that the use of this numbering system is of great advantage to the growers, entirely aside from performance record work, as for instance in the fumigation of particular trees, pruning, and individual tree care in many respects.

PRACTICAL ORANGE PERFORMANCE



WATER

Our idea is for you to get it—

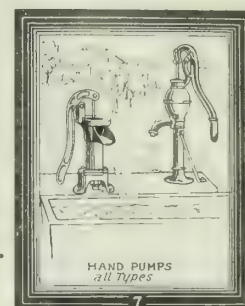
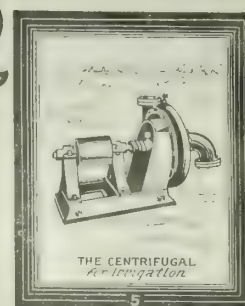
At the least expense
With the least trouble
Without interruption
In the shortest possible time.

Not now and then—
but Always.

Our prices and catalog will be sent on request, just cut out picture you are most interested in, or give their numbers

SMITH-BOOTH-USHER CO.

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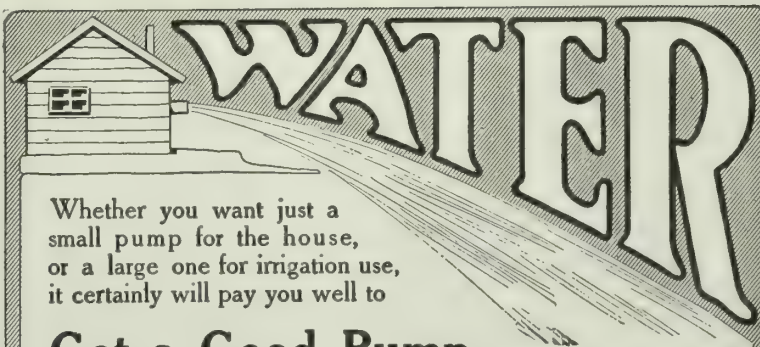
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on "Western" Surface Irrigation Pipe are driven by a specially constructed machine which we control by patent rights. "Western" is the strongest pipe on the market to-day; also the most serviceable and economical. Why not save money and use this strong, riveted pipe. It's the modern pipe for the modern farmer.



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The safe way is to get advice from pump specialists like ourselves. As manufacturers we have solved hundreds of pumping problems—and our accumulated experience is at your command. Our advice may save you both money and trouble. We manufacture and sell

**Horizontal and Vertical Centrifugal Pumps
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Let us help you select a pump adapted to your particular requirements. CATALOG 28-B describes Bean Centrifugal Pumps. CATALOG 28-D describes all other pumps (also Bean Distillate Engines). A postal will bring either or both. Why not send now?

BEAN SPRAY PUMP CO.

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PIONEER CENTRIFUGAL PUMPS
Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices. We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

RECORDS.—The practical orange performance record method used by the National Orange Company of Riverside in securing individual tree records in their extensive orchards is submitted for the consideration of citrus growers. This method includes the number of full boxes, and the weight of part boxes of oranges borne by each tree, and any notes as to quality of fruit that may be advisable.

In carrying out this method the ordinary system of picking must be reorganized to meet the conditions. The picking boxes are distributed to individual trees, instead of in box rows as is usually the case.

Each picker picks an entire tree instead of only the top or bottom sections. One man in each picking gang arranges the boxes in position at the base of the trees, brushes out all dirt from the boxes, and levels off the fruit in the filled boxes so that all boxes contain about the same amount of oranges. This man also carries a small hand spring balance, with two chains attached which hook into either end of the picking boxes. The part boxes of fruit are weighed with this balance, and the average box tare (eleven pounds) subtracted from the total weight, thus giving the weight of fruit in the partly filled boxes. If there appears any striking off-type fruits, such as Australians, yellow navels, golden nuggets, ribbed, corrugated, sectional, pear shaped, rough, or others, a note of this fact is made under the heading of quality along with the other tree data. Also any information of value, such as the presence of scale, gopher injury, dead wood, or such trees, is noted in connection with the individual tree record.

These forms are arranged in books 4½ in. wide by 9 in. long, a convenient size for carrying in the pocket. Each form, as will be noted, provides for records of 80 trees in a row. This number, in other orchards might be modified to meet orchard conditions, if the number of trees in each row is less or greater than 80.

In addition to the valuable data thus secured by the use of this method, it has been found by experience that the rate of picking is increased and the care in handling the fruit is improved. In other words, individual tree picking promotes the efficiency of the individual picker, and increases the care in handling, from the fact that in this system each picker's work is open to continual inspection and comparison. It is the most effective means yet devised for putting into practice the principles of efficiency and careful handling that underlie successful orange picking.

The annual data is collected in forms providing for several years' records on the same sheet for easy comparison.

DRONE TREES.—There is a marked variation in the amount and quality of fruits borne by individual trees of the same type. This variation must be clearly distinguished from type variations. For instance, in the standard type of the Washington navel orange we have found individual trees bearing consistently large crops of high grade fruit of the best commercial sizes, while other trees bear low yields of inferior quality. These low yielding trees have been called drones from the fact that they require as much attention, expense and care for maintenance as the profitable trees, without commensurate returns.

In order to illustrate this point we submit the average performance records from ten best producing and ten lowest producing standard Washington navel trees, located in one of the best navel orange groves in California. These records are fair, typical and comparative for yield variations within the type. These figures were secured during the seasons of 1911, 1912, 1913, and 1914.

VARIATIONS IN PRODUCTION IN THE WASHINGTON NAVEL ORANGE.

Best trees.	Sizes.	Poorest trees.
5.3% of crop	288	% of crop 20.5
7.3% of crop	250	% of crop 14.8
12.2% of crop	216	% of crop 14.8
17.3% of crop	200	% of crop 14.4
19.9% of crop	176	% of crop 13.5
18.4% of crop	150	% of crop 11.6
5.4% of crop	126	% of crop 3.4
7.7% of crop	112	% of crop 3.6
4.2% of crop	96	% of crop 2.7
2.1% of crop	80	% of crop 0.6

Best trees. Grades. Poorest trees.
81.5% of crop "Orchard" % of crop 69.2
11.6% of crop "Standard" % of crop 19.0
6.9% of crop "Cull" % of crop 11.8
An inspection of this table shows that the best trees have produced an average of twenty-five and two-tenths per cent more of the most valuable sizes, 200's to 80's inclusive, than the poorest trees of the standard type. The best trees have produced an average of twelve and three-tenths per cent more of first or orchard grade fruit than the poorest trees. We have found that by rebudding we have been able to replace the poor individuals with an hereditary tendency to produce few and poor fruits, with tops that produce the larger yield of better commercial grades and sizes of fruits.

The total actual difference in yield of these best and poorest lots of comparative standard type Washington navel trees is shown in the following table.

VARIATIONS IN PRODUCTION IN THE WASHINGTON NAVEL ORANGE.

A comparison of the best and poorest trees in one of the most productive groves in California for the seasons 1911, 1912, 1913, and 1914 is as follows, average number of fruits each year for four years:

Best trees.	Sizes.	Poorest trees.
35.....	288	37
48.....	250	27
82.....	216	27
115.....	200	26
132.....	176	25
122.....	150	21
36.....	126	6
51.....	112	7
28.....	96	5
14.....	80	1

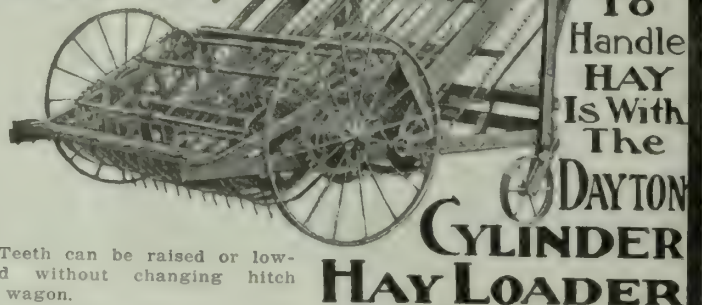
Average crop per tree: 663 fruits, best trees, 4.04 packed boxes; 182 fruits, poorest trees, 0.95 packed box. Value f.o.b. packing house on an acre basis: \$546.21 best trees; \$128.44 poorest trees.

A difference of \$417.77 per acre.

The best produced an average of 663 oranges or 4.04 packed boxes, while the poorest produced an average of 182 or .95 packed box of oranges per tree, or a difference of 481 fruits or 3.09 boxes per tree. Figuring this difference to the acre basis at the rate of 80 trees per acre, the actual rate of planting in this grove, it amounts to 247.2 boxes per acre. The actual value of this difference is at the rate of \$417.77 per acre f.o.b. packing house. Can we afford to ignore these facts?

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The Cheap Way
The Easy Way
The Quick Way
The Clean Way



To Handle HAY Is With The DAYTON CYLINDER HAY LOADER

Teeth can be raised or lowered without changing hitch on wagon.

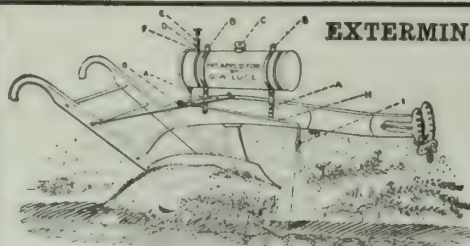
THE Dayton Cylinder Hay Loader gathers hay from swath or windrow with a slow forward and upward lift and deposits it on an endless carrier. No rolling or winding of hay. No picker fingers or springs, complicated drums or delicate mechanism—but a plain good loader that properly does its work. Has frictionless roller bearings. Strong and durable. Light draft. WRITE FOR PRICES AND FULL DETAILS—OR CALL AND SEE US.

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EXTERMINATE MORNING GLORY

Johnson Grass,
Bermuda Grass,
Noxious Weeds and
Injurious Insects
with NONPAREIL
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PLOW TANK

For sale by all dealers and manufacturers. Send for Booklet P, which gives full particulars and prices. Very low rates in tank cars and iron drums. Presto Tank outfit, \$8.50 f.o.b. San Francisco.

Waste no time. Tell us how many acres you want to treat and the crop you are planting.

The growing season and not the dormant period is the right time to do the work.

One large grower purchased during 1913 \$2000.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphids, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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Stuart Prolific Almond Buds

FOR SALE

Can furnish any quantity from now on.

\$5 a thousand in large lots.

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EUCALYPTUS SEEDS

In large or small quantities, 40 species to select from. Write for my free pamphlet, "EUCALYPTUS CULTURE." Trial packets, 15c each, 4 for 50c.

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345 S. Main St., Los Angeles, Cal.

The best trees produce at the rate of \$546.21 and the poorest \$128.44 per acre, f.o.b. packing house.

INDIVIDUAL TREE KNOWLEDGE.—The importance of individual tree knowledge cannot be overestimated. That it should have been largely overlooked in the past is all the more reason for attention to this phase of citrus culture now. We have had a large number of visitors who desired to see for themselves the nature of our work along this line, and we are always glad to show our methods, so far as our time permits. We have had many comments from notable authorities giving their opinions as to the importance of this individual tree investigation, amongst which the following from Professor P. G. Holden, a man of international fame who has been of great service in the advancement of agricultural knowledge and practice, particularly in the improvement of corn production, is typical.

"I know that you are on the right side with the improving of citrus fruits. There has been a common impression among not only the common people but among scientists who should have known better, that a graft was simply a graft, and that there was no opportunity for improving by selecting some prolific branches or trees. In many respects, I believe that the opportunity for advancement and improvement are much greater with the budding and grafting method than with seed, although I am satisfied that the same general principles hold true to a much greater extent than has generally been supposed."

The ideal which we have in mind is the bringing up of the individual tree production to that of the best trees in the grove. We believe that this ideal is possible of realization and that individual tree knowledge will be the means through which this achievement can be accomplished.

Fruit Crop Reports Ending June 13, 1914.

[Written for the PACIFIC RURAL PRESS.]

No radical changes have been made in the fruit crop estimates from those counties reporting since our last crop report in May, although there are small changes made in several instances.

Earle Mills, of Butte county, writes that up till June 10 the June drop had not started, and therefore the figures given may be somewhat altered later.

J. E. Hassler writes from Eldorado county that a great many sour-sap affected trees are recovering.

A letter from F. C. Schell, County Horticultural Commissioner of Fresno county, states that the drop in peaches and apples is due to the past two years drought and little leaf.

William Wood reports that the reason for less than 100% of a walnut crop in Los Angeles county is due to a light set and blight. He also reports that grain will be 100%, and that alfalfa conditions are excellent.

Roy K. Bishop, of Orange county, states that walnuts are showing much blight and the crop will not be over 60%. Sugar beets are 110% of a crop, and lima beans are proving to be a good stand.

W. Beers writes that fully 60% of the walnut crop of Santa Barbara county is developing into large sizes, and that the blight seems about dried out.

F. C. Willson, of Sunnyvale, Santa Clara county, reports that he finds apricots have undergone a heavy drop in places and are not sizing up to normal, which will cut a big figure in the crop.

Charles F. Collins writes that the navel orange crop in Tulare county now promises well, but that valencias are light.

G. W. Harney, of Yuba county, writes that prospects are for a normal crop of Thompson Seedless grapes of fine quality, although careful sulphuring against mildew will be a requisite. Rain and cold weather are holding back fruit maturity, although no other damage has been done.

Counties reporting on following fruits not tabulated in list:

Almonds—Alameda, 60%; Butte, 45; Contra Costa, 30; Fresno, 100; Lake, 100; Los Angeles, 100; Napa, 25; Nevada, 100; Solano, 60; Sonoma, 30; Yolo, 65; and Yuba, 70%.

Apples—Butte, 80%; Eldorado, 85; Lake, 100; Los Angeles, 100; Napa, 95; Nevada, 100; Orange, 80; Santa Barbara, 100; San Benito, 100; Sonoma, 80; Tulare, 90; and Yuba, 70%.

Figs—Butte, 100%; Fresno, 100; Los Angeles, 100; Nevada, 90; Tulare, 100; and Yuba, 100%.

Grapes—Mendocino, 100%; San Joaquin, 100; Sacramento, 125; Sonoma, 75; and Yuba, 100%.

Oranges—Butte, 100%; Los Angeles, 90; Orange, 100; and Tulare, 100%.

Walnuts—Los Angeles, 80%; Orange, 60; and Santa Barbara, 60%.

One of our field men reports that the Santa Clara prune crop now looks to be somewhat better than was predicted earlier, especially on the higher land off from the floor of the valley, where it is thought that many sections will go 50% or better. Lower lands, however, look to be about 25 to 30% normal.

Another representative of this paper reports that there is some difference of opinion in San Joaquin and Sacramento counties regarding the grape crop, William Garden, of Stockton, stating that it will not exceed 75%, while many prominent buyers and

growers state that it will exceed 100% by a large margin.

OREGON FRUIT OUTLOOK.

Our manager, Mr. Frank Honeywell, writes from Portland, Oregon, that M. H. Williamson, State Horticultural Commissioner of Oregon, says that owing to frosts in April, the prune crop of that State will not be over two-fifths of that of last year. Pears will also be a light crop, on account of frost. Peaches and apples will be heavy, while cherries are very light. His figures for prunes were not over 12,000,000 pounds, as against 30,000,000 pounds last year. Buyers are now paying about 8 cents, orchard run, for Italians, the principal prune crop of Oregon.

He estimates the apple crop of Oregon at two and a half million boxes, of which one and a half million will come from the Hood river section.

EASTERN FRUIT CROPS.

From the appearance of crop reports the prospects are for a large yield of fruits of all kinds, except that the peach crop in some sections has been materially reduced or entirely wiped out, and twig blight is again doing much damage to apples. Through practically all of the country, apples have from a medium to a heavy setting of fruit, and because of the more general use of spraying this year, the 1914 apple crop should be a large one in size and an excellent one in point of quality.

A noticeable effect would, however, be noticed in this year's crop if a dry summer should follow, like that of last year.

According to advices from Sebastopol, there were 10 carloads of berries shipped from that place, last week, by the Sebastopol Berry Growers' Inc. Crews are working night and day during this rush season, in order to harvest the crop.

DECIDUOUS FRUIT CROP ESTIMATE FOR WEEK OF JUNE 13, 1914.

COUNTIES.	Apricot Trees in Bearing	% of Full Crop..	Apple Trees in Bearing	% of Full Crop..	Plum Trees in Bearing	% of Full Crop..	Prune Trees in Bearing	% of Full Crop..	Peach Trees in Bearing	% of Full Crop..	Pear Trees in Bearing	% of Full Crop..
Alameda	415,000	80	55,200	...	15,000	...	11,600	40	8,400	80	56,000	50
Butte	7,545	50	12,137	80	...	...	84,405	30	133,638	100	13,199	50
Colusa	17,000	...	6,500	...	...	...	92,500	40	13,000	...	7,000	...
Contra Costa ..	53,100	40	8,000	...	2,840	...	54,220	35	28,200	100	73,500	25
El Dorado	400	...	32,000	85	1,000	80	124,000	20	110,000	100	70,000	75
Fresno	145,600	75	20,000	...	10,600	100	83,000	90	3,270,000	75	...	...
Humboldt	...	...	...	...	...	...	...	...	...	...	...	...
Kern	25,000	...	12,000	...	6,000	...	4,100	...	50,000	100	1,500	...
Kings	79,600	100	500	...	...	...	6,860	...	386,200	120	...	...
Lake	1,975	50	9,872	100	...	...	29,622	35	5,829	100	24,850	40
Los Angeles ..	200,300	100	5,150	100	53,000	60	61,710	...	218,720	100	75,000	100
Madera	10,000	35	11,000	85	...	...	...	...	70,000	100	...	...
Mendocino	500	...	2,000	100	2,000	...	20,000	60	10,000	75	10,000	75
Merced	8,250	75	4,500	...	...	...	1,525	...	148,401	40	4,250	...
Monterey	25,000	120	70,000	50	1,100	...	3,350	...	9,500	...	6,200	...
Napa	17,000	25	45,000	90	120,300	...	91,180	25	107,880	95	69,120	25
Nevada	170	100	12,270	100	2,300	100	5,800	75	12,760	125	36,270	90
Orange	167,240	85	12,795	80	...	...	17,320	...	38,350	25	...	...
Placer	7,485	...	19,480	60	239,000	60	20,465	...	994,250	90	104,600	80
Riverside	66,317	90	5,087	...	...	...	22,138	...	45,293	90	12,151	...
Sacramento ..	20,000	90	16,000	...	7,600	80	100,000	20	65,000	90	220,000	75
San Benito	40,000	80	17,000	100	2,700	...	125,000	50	15,000	100	6,000	100
San Bernardino	26,200	85	22,680	...	...	...	2,800	...	8,250	...	18,500	65
San Diego	9,140	...	20,200	...	...	...	3,240	...	8,760	...	2,318	...
San Joaquin ..	70,540	75	13,500	...	30,000	75	65,250	30	234,130	40	32,000	75
Santa Barbara.	3,450	100	2,450	100	...	...	1,250	...	2,325	100	715	100
Santa Clara ..	600,000	75	20,200	60	271,000	100	5,357,900	30	610,500	90	131,200	60
Santa Cruz	56,440	100	590,878	100	...	...	99,096	...	10,594	...	14,286	85
Shasta	6,500	...	20,000	...	1,000	...	87,500	25	46,000	80	30,000	90
Solano	237,800	25	3,450	...	110,000	85	465,000	40	490,600	90	203,000	25
Sonoma	23,450	50	234,120	80	6,700	90	598,040	30	28,670	90	81,270	100
Stanislaus	31,000	100	4,372	...	10,500	...	11,400	...	200,410	90	6,820	...
Sutter	4,804	...	4,700	...	...	...	39,922	...	130,854	...	11,309	...
Tehama	64,410	55	18,650	...	6,000	...	115,700	60	679,400	70	63,050	50
Tulare	32,075	90	13,320	90	12,000	90	137,935	60	348,170	100	3,287	...
Ventura	200,000	95	8,100	...	...	...	19,000	...	7,800	...	...	...
Yolo	121,520	40	2,145	...	3,500	...	130,000	40	146,600	70	51,000	50
Yuba	18,750	40	7,250	70	...	75	5,055	50	69,555	75	14,450	75



For Quickness and Economy in Drying Fruit



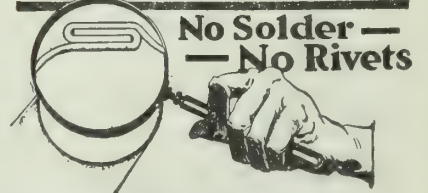
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—It tells the modern, economical way of handling fruit.



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239 RIALTO BUILDING
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Simple construction is necessary in irrigation pipe. Simplicity means strength.

Ames-Irvin Irrigation Pipe

is constructed without solder or rivets. Nothing but the sheet of metal itself is used. Each sheet is edged, locked together and then set down under 3500 pounds pressure. Special machinery does the work.

When finished the seam is simple, solid and strong. There are no rivet holes in the steel—it can't leak.

Ames-Irvin lock-seamed irrigation pipe won first prizes against all competitors at the Sacramento state fair in 1913 and at the Fresno and San Jose county fairs in 1912.

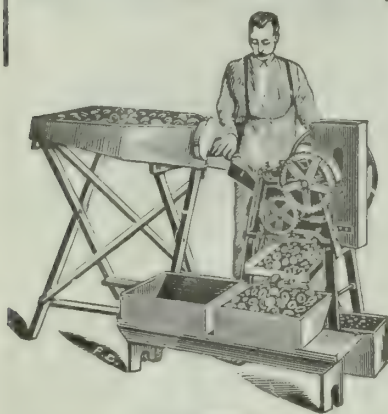
Send for Booklet RP

It tells all about irrigation pipe and its construction. After reading it your judgment will tell you which to buy. Get it—today.

Ames-Irvin Company

8th and Irwin Sts. San Francisco

Improved Fruit Pitting Machines



CAPACITY:

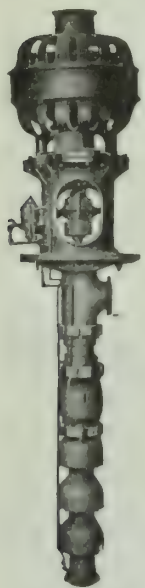
APRICOTS, 1 ton per hour.
PEACHES (freestone), 2 tons per hour.

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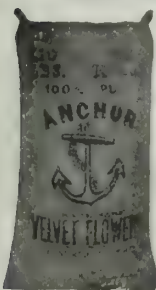
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Constructive Agriculture—No. 24

CALIFORNIA FARMING AND AN EIGHT-HOUR DAY.

(Concluded From Last Issue.)

[By G. H. HECKE, Woodland, at the Davis Fruit Growers' Convention.]

HIGH-CLASS LABOR LOSES.—First. The skilled mechanics and artisans have family ties here and support churches, schools and fraternal institutions. They are in large majority of American nationality and live up to the California standard. These workers are generally in receipt of fair wages and enjoy already the advantages of a short day of labor. They would not be benefited by this law and must endure, without compensating advantages, the higher cost of living which the enactment of the law would cause. Their income would be materially reduced by the fact that "overtime" work is absolutely prohibited by the proposed bill. Their present strong position, gained by organization would be much endangered by the powerful, alluring inducement to workers all over the civilized world, that California is to be the paradise of labor. Short hours and easy life promised by this law would cause an invasion of elements that might not be desirable as citizens, and be the cause of serious trouble and menace in the future to both employers and employees; to the former by their disposition to limit hours and service to mere existence; to the latter by their disposition to deprive efficient workers of their well-earned jobs.

THE LAW AND ALIEN OWNERSHIP.—Second. Among the other class of laborers concerned with this measure, of which only a minority are citizens of the United States, we find representatives of all Caucasian races and a large proportion of the Oriental. Most of this type of labor is used in agriculture, railroad construction, irrigation, reclamation and similar quality of service. It is now performing the work which is disagreeable, either stoop-over farm work, such as picking grapes, prunes, harvesting potatoes and sugar beets, or employed with the pick and shovel. But we find American labor in charge of the most responsible work of the farm, running machinery and working teams, caring for live stock and superintending most other responsible work, while the monotonous hand work, performed under discouraging but unavoidable conditions, in cold wet weather or under the burning sun of an interior California summer—we find this work done by aliens who live here because they experience conditions that make this State appear a paradise compared with their old homes. Wages are higher than in their own countries by more than 100 per cent. Hence they are content to come here and make their home with their savings, so much so that the farming communities in 1912 were practically a unit in demanding laws preventing land ownership by aliens of this class.

Oriental laborers, of which type too many have already become the owners of good California land, are generally unmarried, pay little or no taxes and withal are not in such deplorable physical and financial condition that they need the arbitrary hand of state in an eight-hour law. They would no doubt thrive better under any enactment that would further deplete the farm of its white help and place its

burdens most heavily upon the American employe in both industrial and rural pursuits. They are a welcome help, to be sure, at certain seasons of the year for harvesting crops in adverse weather, or performing back-breaking service where white labor is not available. But let us legislate in the light of the fact that no law is wise, or just, or enduring, that is not passed in view of the future of the social and material interests of agriculture. For in that most ennobling occupation we know that the primary incentive is the establishment of American homes; that its greatest achievement is human contentment and happiness; that its most potent value is good citizenship. To secure these, we must not permit these homes to become the mark of faddists and theorists—to be burdened with experimental restrictions by legislative act.

THE FARMERS' BURDEN.—The white man's burden is carried more patiently by the farmers than by any other calling but when the last straw is added, something will break, and then the world will have to hustle for food. It would be like Mark Twain's coyote that traveled 37 miles every morning for its breakfast. The coyote had nothing else to do, and it did not tire it to run. The proposed measure, if passed, will substitute rigid rule for reasonable action. The load of responsibilities already borne by the farmer, who pays for all, is not thought sufficient by the advocates of this bill to hold him to the clods. They would not permit even the farmer's help to bear his portion of the pack by working over the limit, in cases of emergency and at times when the doing of such work determines whether the help can secure continued employment. The penalties of the bill are applied solely to the employer, who is risking his whole investment, his strength, his hope in the uncertain venture of farming. He alone is to be punished. From 50 to 500 dollars is the penalty, and he may go to jail by an additional decree of court. To the bright originator of this measure, it never occurred that the processes of agriculture go on day and night regardless of political regulations. Chickens will hatch even in an incubator; fruit will mature and perish; live stock must be fed and watered even within the 16-hour interval, and the husky farmhand will demand his breakfast before the timelock releases the grub.

An old German proverb has it that a perfect family consists of husband, wife, sons and daughters, and a dog. But the 8-hour law will not permit such limitations as this. Where help is required, the perfect family will consist of the farmer, his field hands including his wife and children, an official time-keeper, a detective, and a resident lawyer. The prosecuting attorney will be a frequent inmate of the happy home, and even the judge must ride by in the mid-afternoon to see that Maud Muller does not rake the alfalfa in forbidden hours.

OVERTIME ABOLISHED.—It is true the happy family could work overtime in the rush of the harvest season—all but the hired help. For overtime, which is an important item in the

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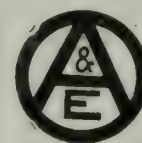
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pay-check of wage-earners, is absolutely prohibited under the proposed humanitarian law. Under it, during the irrigating season, often at intervals, depending upon when the neighbor finishes, arrangements could not be made with help to work longer, even for a satisfactory consideration. Water flows 24 hours a day and cannot be stopped at the stroke of the clock. So would many other farm operations be disorganized, without the mutual accommodation provided for in the overtime system. Fruits would ripen and decay in the orchards; hay and grain spoil in the fields and stock suffer from inattention, if "time" could be called, regardless of the wishes of the workmen and the necessities of their employers. Overtime work is imperative in the packing and shipping of fruits to market, in the processes of drying and canning. There is no other way of getting the work done under the prevailing condition of the labor supply.

Piece-work is also compulsory, and it is an inducement to willing helpers, as it enables them to do more work and receive more pay, and hence win the reward of diligence and efficiency. In the future, piece-work would be limited to eight hours a day, thus reducing the amount of service which the worker of exceptional power and skill could offer to his legitimate advantage; at the same time involving loss and often destruction to the industry, that exceptional energy and skill would gladly prevent. Its abolishment would reduce the productive power of all workers toward a common level, thereby sacrificing that which is immensely serviceable to both the employer and the employe, namely, the ability of the man of special capacity and industry.

WAGES COMPARED.—The equity of limiting the hours of farm work in California is not obvious to those who have access to the labor statistics of the United States. The "Agricultural Outlook" of March 23, 1914, published by the Department of Agriculture, says on the subject of farm labor that wages have increased 2.5% during the past year (1913), and about 11% during the last four years. Since 1902 the increase has been 36%. The current average rate of farm wages in the United States, when board is included, is \$21.31 per month, and \$37.50 in harvest. When board is not included, the rate by the month is \$30.31. If we compare this with California rates we find that the average wages with board are \$30 per month and \$45 in harvest. If board is not provided, 50 to 75 cents per day is generally added.

In the same official bulletin we find that the average length of time per day required of hired help on the farms of the United States is for the spring season, 9 hours and 54 minutes; during the summer season, 10 hours and 54 minutes; for the fall season, 9 hours and 52 minutes, and for the winter season, 8 hours and 33 minutes. This tabulation corresponds very closely with the time required of farm labor in California, but in no State in the Union is there a law that, under heavy penalty of money or jail sentence, compels a producer of food-stuffs to delay his seeding or planting during the short rainless interim in the winter weather, or to prevent his using necessary precaution in protecting his grain, or hay, or fruit from threatening damage, or compel him to abandon his animals in cases of emer-

gency, or to stop his team on a long haul a mile or so from home at the stroke of the clock ending the 8-hour limit.

I have endeavored to show by reliable statistics that the agricultural laborer in California is as well protected as elsewhere, and he finds more remunerative work and far superior opportunities for becoming independent than in any other part of the world, except, perhaps, in Australia and New Zealand. In the latter countries, while the 8-hour law prevails, they are not so foolish as to propose a jail sentence for a producer of food if he should find it advisable to work as long as may be necessary for his best interests, which are also for the best interests of his State. They content themselves to require a sufficient remuneration for overtime.

ECONOMICS OF FREE CONTRACT.—Necessities and comforts are secured by labor, and reason must dictate the wise purchase and fair sale of labor. But the proposed measure limits arbitrarily to eight hours, help of all kinds, in all callings, under all circumstances with the sole exceptions of fire, flood, or extraordinary danger to life and property. It limits to eight hours the amount of time, whether or not it suits the interests of the employing farmer or his help; it is obvious, as has been suggested, that such an inflexible limitation in working hours would destroy a very considerable portion of available energy on the farm and therefore reduce its power of production. The proponents of this measure hold that a short day means an increased demand for men. I do not think this tenable, but even if it is, it follows inevitably that it would mean less compensation per man, since in the long run it would be impossible to support higher or even present rates of wages upon reduced and more expensive production. Short hours of work in any industry compels increased cost of production, which implies ultimately lower wages. On the other hand, it is argued that shorter hours means a reduction of the profits made from labor, which is only another way of saying that it means a reduction of the capital applied to any industry. Without capital, industry invariably languishes.

In our State such capital is largely supplied by the agricultural industry itself, as from this our great export trade has been developed. The barley and wheat of California compete with the cereals grown in Argentina and Russia, for example, but in order to compete, it must be sold at prices that permit such competition, for the foreign consumer does not care the snap of his finger whether the grain is produced on an 8-hour or a 12-hour day. The price is regulated abroad and we must abide by it. Dried apricots, prunes and other cured fruits are in demand in Europe, but must be sold there to compete with the products of Asia Minor, Italy, Spain, France, and other countries. Would it be wise by this summary legislation to thus handicap an industry that in fruits alone brought into California in 1913, for distribution, the tremendous sum of \$114,000,000?

This measure establishes a penalty which all people engaged in production, manufacture and trade must pay. The California farmer, producing food for all and subject to the hazard of seasons, must abandon his export trade and confine his activities to ex-

ploiting his own people with higher prices and less profits to his own business. The wage-earner in the city who already enjoys short hours and good pay will suffer by paying higher prices for every meal. The capital that is intended to invest in highly developed farms not finding a profitable return, will be invested in the neighboring States that have no such laws, for it cannot earn interest where shortening hours has increased the cost but not the profits of farm products. As development ceases, by being directed to other States, the position of the farm owners of California will be such that inducements will be made to them to lease to alien "partnerships" which could evade the provisions of the law. For we know that American working men will not combine in partnership arrangements, nor will the allied types of German, English or Scandinavian. It is otherwise with the Oriental and Southern European. They do not assimilate with our people, but will combine amongst themselves by taking shares in companies, which, being thus worked by owners, will escape this drastic law. In fact, no measure could be devised that would be of greater benefit to these aliens than the act proposed, and it would be at the expense of American labor and business.

CONFUSING RESULTS.—This measure ignores alike the requirements and habits of every-day life on the farm. It will, if enacted, confuse at a hundred points the order and increase the cost of farm administration. Producers on many smaller places being unwilling and unable under such circumstances to hire help, will be inclined to adopt the European system of having the wife and the children assist in the ranch work. Is this desirable? But how can these disarrangements be prevented? There is no law devised, so far, that protects the farmer and his family as their unique position in the world's economics deserves. The agriculturist is forced to pay insurance for his help that should be equally obligated to pay a part of it, for the farmer is as much an employe in the economy of feeding the world as is his hired man. Yet no fault is found with the workmen's insurance act, except that both parties should bear the burden of all contingencies to life met in pursuance of filling the bread-baskets of the people. It is the same fundamental mistake made in other laws, where the employer must be made culpable with no penalty to the wage-earner.

California agriculturists are not opposed to labor reforms. They are not in opposition to the correction of any conditions that make the lot of the worker for wages harder to endure. As good American citizens, they support any measure that will be for the betterment of labor. But they do not propose to submit to any arbitrary system that will necessitate an army of delegates to police the rural homes and parcel out the time to suit the fads of political agitators and visionary reformers.

The very foundation of popular government was the belief, by those patriotic citizens who signed the great declaration, that personal liberty and thought should not be interfered with by arbitrary action. The mere consideration, therefore, of legislation which prescribes what a man shall do with his time is clearly a reversal of the policy under which our Government and social order were estab-

lished. Every man's time is his own in which to work or play, as inclination or necessity may dictate, and the predetermination of how an American citizen shall employ his time by the community in general, under a state law, is both tyrannical and ridiculous.

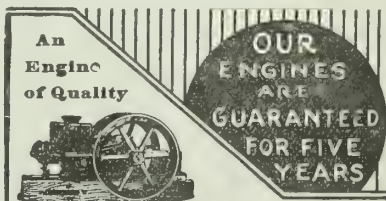
Let all farmers get ready for such action as may be dictated by common sense, which will, by refusing to endorse this fanciful and Utopian theory, leave to the men and women of this industry the God-given right to use their time as may seem best to them for their own good, under such circumstances as they may be temporarily placed. No curtailment of this liberty can survive the test of time; no abridgement of fundamental privilege can permanently endure. And any attempt to establish such arbitrary policy would be made at enormous cost to determine what should be plain to every American citizen who has the common sense to see beyond his own nose. Vote "no" on the proposed amendment, which will appear on the ballot in November.



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AGRICULTURAL REVIEW.

Deciduous Fruit News.

The first box of Bartlett pears to be shipped from the State this year, left Sacramento, June 11. The box came from the New England orchard, near Marysville, and is ten or twelve days earlier than normal.

The recent rain in the Sacramento valley did little or no damage to the fruit crops there, according to late advices. Reports from Oroville and Chico, are to the effect that the rain will improve the prune crops as it washed off many of the red spiders and will not damage the apricots as they were not far enough advanced. Districts that were visited by the recent heavy winds did not fare so well, however, and reports from Sutter county state that considerable damage was done to orchards and fruit in that section, although neither will be seriously effected. Some apricots and peaches are said to have been knocked off from the trees in Kings county, by the winds which visited there at the same time.

A Lodi fruit firm has contracted for the pear crop on M. P. Stein's pear orchard, near that place, at \$52.50 a ton, orchard run. This is one of the record prices reported so far this season.

The Pratt Lowe Preserving Company, of Modesto, state that they will not can any apricots this year and will not start their plant until peaches come in, which will be about the middle of next month.

According to A. J. Cook, State Horticultural Commissioner, 75,000,000 ladybugs have been gathered by the State Insectary this year, for distribution among fruit growers. He also states that the supply is far behind the demand.

T. Casaleguo, a fruit grower of Oakdale, Stanislaus county, writes to a local paper of that place, from Paris, France, that California dried prunes and peaches are retailing there at 24 cents a pound. He further states that California peaches have only recently been introduced in that market and that he believes there is much room for development along that line.

Citrus Fruits.

The eradication of the black scale on citrus fruits, was a subject discussed by a number of growers at San Fernando last week. Wm. Wood, county horticultural commissioner, attended the meeting and advised the growers to carry on systematic fumigation of citrus trees, about the latter part of July.

It is now estimated that the Valencia crop of Tulare county, which will reach about 1200 cars for the season, will bring the growers over \$1,000,000 gross.

According to Dr. C. J. K. Jones, director of the Santiago Orange Growers Association, the Florida orange crop has been materially damaged by severe drought and the fruit is dropping at a fearful rate.

The 3500 car mark was passed last week at Riverside, for the season, and it now begins to look as if 4000 carloads of oranges might be shipped from that district, this year.

Vegetable Doings.

One day last week there were shipped from Imperial valley, 258 carloads

of cantaloupes. This is said to be a record day for the valley and should the markets continue to warrant such heavy shipments it is thought that this year's output will beat all previous years, in number of cars shipped. Reports are current that the government has made several arrests of shippers, from that section, due it is said to a combine among the shippers which is in restraint of trade.

One of the biggest crops of Australian Brown onions ever grown, will be harvested by growers in the Delta sections, near Stockton this year, the yield promising to go from 400 to 600 sacks to the acre.

Due to the late rains, the bean planting along the Sacramento river, in the vicinity of Knights Landing, will be delayed somewhat this year, as much of the best land is still under water.

A meeting will be held at Stockton, August 11 and 12, by horticultural commissioners and growers to take steps toward the protection of the potato against pests. It is thought that speedy action must be taken if the industry is to continue to be of as much importance in that section.

A number of cantaloupe growers of Turlock, have entered into an agreement with the United Marketing company, of Los Angeles, for the purpose of marketing their crops of cantaloupe. It is said that there are 1400 acres planted in that section this year, which is far in excess of any previous year and is proving to be too large to handle in the coast markets.

Reports from Dinuba, are to the effect that early tomatoes are being shipped by the carload from that place, to a commission firm in Seattle. This is the first time that such large quantities have been grown there and it is thought that this year's crop will prove profitable to the growers.

Army worms are doing considerable damage around Chico. W. F. Hill, of that place having lost 45 acres of beans in that way during the past week or two.

Farmers near Orland are planning

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on planting about 100 acres of potatoes this year. This is a large acreage for that section, but it is thought that it will prove profitable, as there is always a good market there for them and with a good supply of irrigation water available there is little doubt felt but that the undertaking will be successful.

Field Crops.

Reports from Calexico, Imperial county, state that about 800 acres of land, planted to cotton near that place, have been flooded with waters from

the Colorado river, which has broken its banks again, although no serious damage is looked for, as the crest of the high water has now passed, according to the United States Reclamation Service.

Harvesting of grain commenced at Helmet, Riverside county, last week and it now seems evident that this year's crop will be the largest that has ever been harvested in that section.

A. J. Nielson, county surveyor of Kings county, reports that all danger of floods to the grain crops on the

Tulare lake lands is now past, and that harvesting will be under way this week. He estimates that there are 75,000 sacks of grain to be harvested and states that barley will go over 20 sacks to the acre and wheat almost as heavy.

The recent rains in the Sacramento valley delayed grain harvesting there. It is reported that while the barley that has been harvested there is plump and heavy, it has been damaged to some extent by the late dampness and is decidedly off color, for brewing purposes.

Sugar beet growers from the southern part of the State are experimenting with sugar beet growing in Fresno county, and advices state that they are so well pleased with the prospects, that they contemplate organizing a co-operative company, who will build a factory at, or near Lenare, Fresno county.

The Valley Grain and Warehouse company, of Tulare county, estimate that there will be more than a quarter of a million sacks of grain harvested between Jasmine and Poplar this year. Summer fallow land is said to be yielding around eight sacks of wheat to the acre and good pieces of barley are going close to 20 sacks.

Miscellaneous News.

Prominent officials of the Sonoma County Poultry Association, recently made a trip to Sacramento, where they interviewed Governor Johnson, in an endeavor to have some steps taken by the State, in excluding the Chinese egg from the markets of this State. According to the association, speculators are placing larger orders than ever, for these eggs, and are putting them upon the market in American cases and selling them for California eggs.

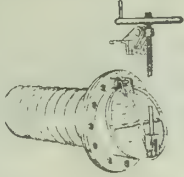
Bee men in the vicinity of Newman, Stanislaus county, are complaining that this year's alfalfa crops are not blooming as usual and that as a result the bees are not doing well. Some growers are even feeding their bees sugar, in order to tide them over what is thought to be a temporary condition.

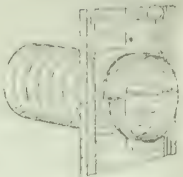
Considerable fear is being expressed by farmers in Shasta county, lest their crops be seriously damaged by an invasion of army worms. They are said to be headed south and are cleaning up all green vegetation in their path.

The preliminary plans for the Farmer's Protective League, which was started at Davis, during the fruit grower's convention, were practically completed last week at a meeting held in Sacramento, when Arthur Dunn, of Berkeley was hired as secretary and offices in Sacramento secured. With Frank McKevitt as president of the league and an executive board composed of Geo. H. Hecke of Woodland, Geo. H. Cutter, of Sacramento, and Frank B. McKevitt, the formation of committees in the various counties in the district north of the Tehachapi mountains, coming under the jurisdiction of the Farmers' Protective League, will be completed in the near future.

BORERS IN BALM OF GILEAD.

To the Editor: In answer to R. B. O., of Reedley, I will say that my Balm of Gilead trees were affected the same as his and I took a knife and cut into the tree under the loose, wet bark, and every time I did so I found a large borer or worm. I took pains to get them out, clean the tree of all







Irrigation Gates

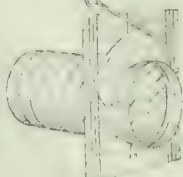
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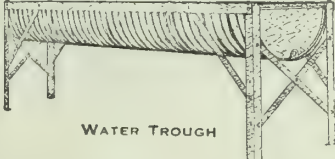
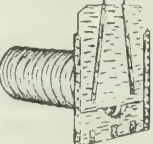
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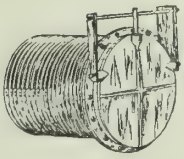
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dirt and fill the space up with good yellow soap. This year the tree seems to be healing over, but I have other trees affected. It is a worm that gets into the tree where something has broken the bark.—Mrs. E. H. T., Riverdale.

ETTERSBURG No. 80.

To the Editor: I note the report of ill-luck with Etterburg No. 80. The same would have happened with the Banner or other sorts.

My No. 80 was not irrigated nor fertilized. It is in the peat soil of the Delta, and is the greatest cropper I ever saw. The berry is large, globular, bright red, fine flavor, and of exceptionally good shipping quality, for it does not crush, and when canned holds its form.

I think market growers are going to find this a very interesting berry. Oakland. JNO. P. IRISH.

One Thousand Questions in California Agriculture Answered

By EDWARD J. WICKSON, A. M.

Is made up of questions asked the PACIFIC RURAL PRESS by actual farmers and answered by Prof. Wickson. These queries and replies make a book of nearly 300 pages, bound in cloth, and is sent postpaid for \$1.50 per copy. Every farmer should have this book, because problems confront him daily, which are answered in a concise way in this book. Every subject which interests the reader is easily found through the comprehensive index.

Pacific Rural Press

420 Market Street

San Francisco

PUBLISHERS.

Wright Irrigation Act Applied.

To the Editor: Please tell us how many districts in California are working under the Wright-Bridgeford Act, and in how many cases the Act is considered a success? How many acres are embodied in each district?—H. H. C., Alpaugh.

[ANSWERED BY A. L. COWELL.]

Of the irrigation districts organized under the Wright Act of 1887, the following named, with the approximate acreage of each, are now active:

Modesto, Stanislaus county, 82,000 acres; Turlock, Stanislaus and Merced counties, 176,000 acres; Alta, Fresno, Tulare, and Kings counties, 135,000 acres; Tulare, Tulare county, 37,000 acres; Little Rock Creek, Los Angeles county, 2700 acres; Walnut, Los Angeles county, 600 acres.

The Browns Valley district, east of Marysville, also maintains its organization, but its irrigation system is under control of a private corporation, which supplies water to a portion of the district under contract.

In 1897, the Wright law was superseded by what is commonly known as the Wright-Bridgeford Act, which has since been materially amended. Under it the following districts have been organized:

South San Joaquin in San Joaquin county, 72,000 acres; Oakdale in Stanislaus and San Joaquin counties, 72,000 acres; Waterford, Stanislaus county, 20,000 acres; Imperial, Imperial county, 523,000 acres; San Ysidro, San Diego county, 500 acres; La Mesa, San Diego county, 14,000 acres.

The acreage given above is not, in all cases, from official records, but is approximately correct.

In all of these districts, so far as we are advised, the law is considered a success. In the Modesto, Turlock, Alta, and Walnut districts, irrigation has been carried on with highly beneficial results for a great many years. In the Tulare district, the water supply is not sufficient for all the land in the district and private pumping plants are numerous, but the expenses of the district are met by charging tolls for water used and not by general assessments on all the land in the district, as is customary in other districts. The Little Rock Creek district was not active for many years but has recently been reorganized.

Of the newly organized districts, water is being delivered in the South San Joaquin, Oakdale, and San Ysidro districts. The Imperial district was organized to take over the private system which now supplies the Imperial valley, but negotiations have not yet been completed. The Waterford and La Mesa districts have been organized recently.

There is a State association of irrigation districts to which most of the districts named belong. Its secretary is E. N. Pierce of Manteca, California.

ERECTING A PERMANENT FENCE.

One might suppose that the erection of farm fences was such an old practice that almost anyone would know how best to proceed yet, judging by the badly sagged wire fences that one sees in almost every section of the State, it is evident that there is still much that may be learned by some in the construction of permanent fences.

Experience shows that where wire fences are to be erected, split redwood posts, 8 by 4 in., should be selected, which are 6 ft. 6 in. in length. All large and sound ends should be put into holes, from 22 to 24 in. deep. There is no necessity of making them too big as that involves unnecessary labor both in the digging, filling and ramming and besides the post does not have such a firm grip in the ground.

Where no battens or droppers are to be used the holes should be placed from 7 to 12 ft. apart, care being taken that they are a little more than large enough to receive the posts comfortably, so that room may be left for the rammer to work to the bottom of the hole.

Dig the full depth straight away; if a little too deep it is easy to put in some loose earth to make post required height. Sight your posts from the centre, fill in and ram the bottom—say, the first 6 in.—thoroughly well. The bottom, and near it, is the place where ramming is most required; as the top is approached less ramming will do. Place earth that remains neatly around the post to allow for subsidence.

The tools required for post-hole sinking are a medium-size iron bar with rammer head and chisel point, and a long-handled shovel. This latter tool should have a round nose and be bent inwards at the sides, so as to form a kind of scoop. Small post-holes cannot be dug with wide shovels.

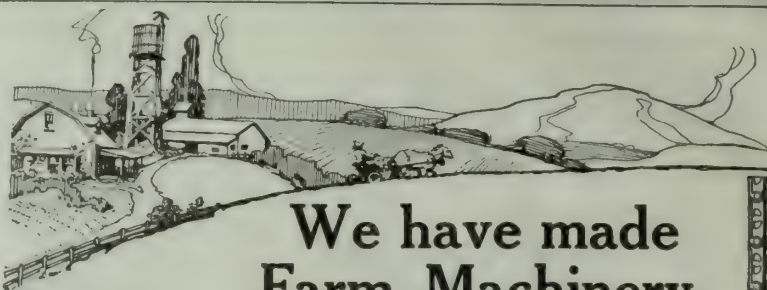
Sink post-holes, if possible, when the ground is in good condition—not too wet and not too dry. Ground saturated with moisture is not benefited by ramming, and will set better without.

DRYING PEACHES IN STACKS.

[Written for the PACIFIC RURAL PRESS.]

When there is a fair amount of dry wind, and the weather generally good, it is sometimes possible to dry peaches in stacks rather than to go to the trouble of spreading them out over the drying yard with all fruit exposed to the sun. A disadvantage under ordinary conditions is that drying is pretty slow and a big equipment of trays is needed. However, if there are plenty of trays and a hot wind, fruit will dry so quickly that the method gives good satisfaction. It is, of course, a great saver of labor, as cost of spreading trays and restacking them is unnecessary. If, however, it is at all damp the peaches will grow whiskers and be spoiled unless one goes to the work of unstacking after all. Another disadvantage is that unripe peaches will cure kind of a greenish yellow, rather than white, as with straight sun drying. When peaches are dried in stacks more than double the usual amount of sulfuring is customarily done.

An advantage aside from saving of labor is that the fruit dries heavier and has more weight to be paid for. The texture and quality of flesh generally is nice also. A further advantage is that there are no "chips", for the small peaches that in the sun would dry out like chips, dry out in stacks only to the same texture as peaches of full size, a saving in both weight and quality. The method is useful in some cases, but hardly likely to attain special popularity.



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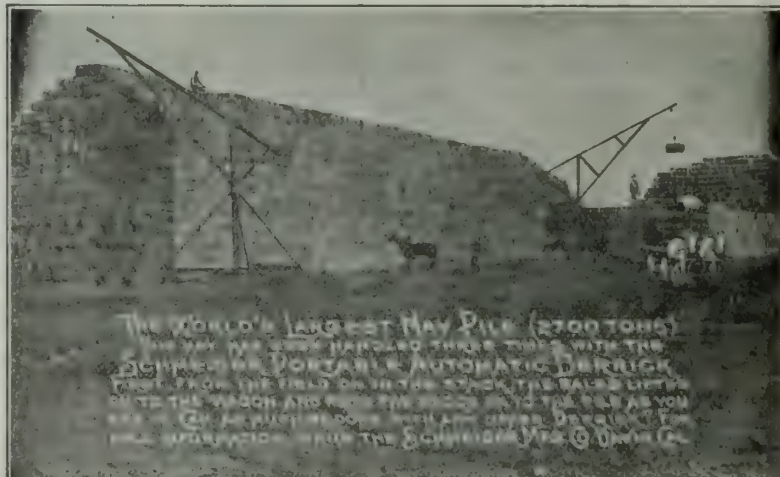
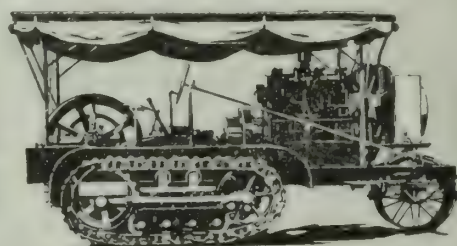
Throughout these 31 years the same policy of "quality first" has been maintained, and today, as always, the name "Holt" stands for reliability in farm machinery whether it is stamped on harrow or harvester. It is the result of the Holt policy, plus high grade materials, first-class workmanship and rigid inspection.

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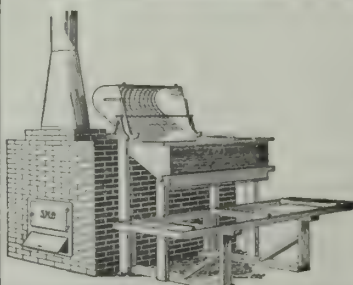
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Alfalfa Meal or Ground Feed?

To the Editor: What is the relative value of alfalfa meal, as compared with middlings, bran, or rolled barley? Would it be better to scald or cook the alfalfa meal or feed it raw? What would you consider a balanced ration of alfalfa meal mixed with other ground feed or grain and about what amount should be fed for weight of hog?—G. W. T., Grizzly Flats.

ANSWER BY PROF. F. W. WOLL.

Alfalfa meal is such an uncertain quantity that comparisons with other feeds are of but little value. We have but little available information as to the chemical composition of the alfalfa meal sold in this state but there is no reason to believe that it differs much from that of alfalfa hay. The grinding of hay does not add anything to its feeding value but merely insures that it is eaten without waste. If alfalfa meal is manufactured from a choice quality of hay, it will compare favorably with wheat bran, being worth perhaps a couple of dollars less per ton; but there is alfalfa meal on the market that would not be worth more than one-half this price. During the last season, we fed some alfalfa hay in our experiments that contained 14% of protein on the average and 25% of fiber, while another lot averaged only 10% protein and over 29% of fiber. Since wheat bran runs about 15% protein and 10% fiber, it is evident that the nutritive effect of even the best grade of alfalfa hay that we fed last winter would not, if ground into meal, approach that of wheat bran.

The relative value of the feeds given would also depend on the roughage with which they are fed; since alfalfa is high in protein (muscle-forming substances). Feeds relatively high in starchy components, like rolled barley would be worth more when fed with alfalfa than with grain hay. Assuming that alfalfa or another protein feed, like skim milk, is to be fed with grain feed, the relative values of the feeds given may be considered as follows: barley, middlings, bran, and alfalfa meal.

If fed to hogs, there will be some advantage in wetting the alfalfa meal, but it should not be scalded or cooked, and for other farm animals, it is preferably fed dry mixed with grain feeds—if fed at all.

Alfalfa meal with barley and middlings will make a balanced ration for hogs when mixed in the following proportions: 2 parts of barley, 1 of middlings, and 1 of alfalfa meal, by weight. Feed four to five pounds per hundred pounds of live weight. If skim milk is available, less of middlings and alfalfa meal may be fed, but if the feed is made into a slop with water, the mixture given is about right. If alfalfa meal costs almost as much as middlings, or if it does not appear to be of good quality, middlings had better be substituted for it. The market prices of the different feeds will determine the proportion of each that may be used to the best advantage in making up rations for hogs, as for other farm animals.

University Farm, Davis.

SHEEP ON ALFALFA.

To the Editor: I have for three years thought of raising grade Shropshire sheep, using my alfalfa as feed.

What would the outlook be for the sale of bucks and could 200 head be kept on 40 acres of alfalfa, yielding 175 to 200 tons per year.—L. V. R., Byron.

[Your plan looks to be feasible inasmuch as there has been a heavy demand for well bred Shropshire rams during the past month. Leading sheep men are now predicting that the sheep of the future will be largely grown in just this manner. There is, however, one requirement that you will have to live up to if you expect to make any great degree of success in such an undertaking, and that is to secure a well bred foundation, for the scrub sheep has no place on alfalfa. We might even say that the outlook for such an undertaking depends more upon the class of stock you raise and upon your selling ability than anything else. Experience seems to show that you are well within your limit in figuring five head of sheep to the acre of alfalfa.—J. C. L.]

JUDGMENT IN TESTING COWS.

[Written for the PACIFIC RURAL PRESS.]

Many dairymen who are using the Babcock test and scales, for the selection of the best cows in their herd, seem to be under the impression that they can set a standard fat record and profitably cull all animals that do not come up to that standard, regardless of age, physical condition, or other factors that may, for the time being, retard production.

That such a rigid rule does not hold good in all cases was recently demonstrated in one of our more progressive dairy counties, where a large dairyman who was building up his herd in this way found, that some ten head of young cows were not giving satisfactory returns, or at least his foreman told him that they did not compare favorably with the older cows in the herd. The fact that they were young cows, with their first calves did not seem to be considered and accordingly they were sold to the butcher.

Another dairyman in the same vicinity in his endeavor to purchase cows, happened by the butchers corals, and seeing the cows went inside. From appearance he decided they were too good for beef and accordingly bought them.

Most of them being dry it was necessary to carry them, without return, for a couple of months, after which they began to freshen. Since that time with the exception of one or two, they have been giving good amounts of fat. In fact one of the cows has been giving around 65 pounds of milk which tests 3.5% fat, since freshening.

The example only goes to show that good judgment is essential in dairying and that dairies cannot be run by rule alone.

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firsts, four seconds, champion ram and ewe.
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Five firsts, three seconds, champion ewe.
Five firsts, three seconds, champion ewe.
sweepstakes over all breeds, champion ram first and second, champion
ewe first and second, and first for flock of one ram and five ewes of
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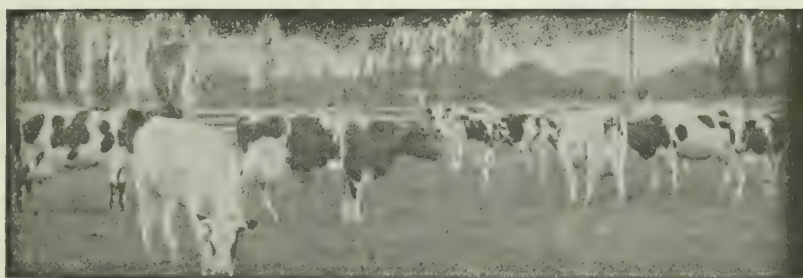
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Engage your calf for use next fall. Your inquiries will be given prompt attention.
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With the Live Stock Men.

The department of live stock, of the Panama-Pacific Exposition, have just issued the preliminary classification for live stock at the 1915 exposition. This classification will afford breeders a fairly accurate idea of the classifications and the manner in which the distribution of prizes will be made, although some changes will likely be made later in the final classification, which will probably appear some time before January 1, 1915.

Some 1400 acres of the Huston Farms company's land, near Winters, Yolo county, has been purchased by an English syndicate who will devote the entire ranch to hog raising on a large scale. Pure-bred boars are to be used on grade sows, and an effort is now being made to secure foundation stock.

A few cases of glanders have been noted in San Benito county, during the past week, and steps are being taken to keep it from spreading.

A correspondent writes from Bishop, Inyo county, that the Longley Ranch company, at that place, have recently started a herd of registered Polled Angus cattle and a herd of Poland China hogs.

Good prices were the rule at the M. P. Brazill auction sale, held near Tulare, last week. One cow brought \$150 and the average for the sale was said to be close to \$100 a head.

H. Gable, of Woodland, Yolo county, recently purchased 12 head of registered Hereford heifers, from O. Harris and Sons of Missouri, which will be used as a foundation for a large Hereford herd.

A dispatch from Chicago states that the Holstein bull calf, King Segis Pontiac Chicago, was sold at the Western Holstein Breeders sale, at Chicago, for \$20,000. The calf was sired by King Segis Pontiac.

The conference of sheep men which was recently held in Washington, D. C. resulted in a determination to establish a technical school of instruction in wool grading for sheep men and an application to Congress for a national boundary line. A survey of the western range lands was also advocated with an object of ascertaining what sections of the west are best adapted to the raising of beef and mutton.

The milk companies of San Francisco have agreed to pay dairymen 17 cents a gallon for sweet milk during the next year. This is one-half cent less than was paid last year, but dairymen feel well satisfied in view of the fact that feed is cheaper this year, than before, and other dairy products are not so high.

A representative of this paper writes that George Watterson, of Bishop, Inyo county, has a fine herd of registered Herefords, and has found this year's demand away above what he has been able to supply.

J. V. Howell, of Modesto, has recently started the foundation for a registered herd of Holsteins, on his ranch near that place, by the purchase of several head of cows from Yolo county.

Word comes from Fallon, Nevada,

that the Churchill creamery of that place, will enlarge their plant by the erection of a concrete building, and a refrigeration plant. The milk from about 800 cows is now being handled by this concern and it is likely that this will be materially increased, as the immense acreage of alfalfa at that place is almost bound to mean more and better dairy cows.

Two carloads of registered Hereford cattle were recently received from Missouri, by Chas. Rule, of Sonoma county. Mr. Rule is a well known stockman of that county and will endeavor to build up a herd of high-class stock in the future.

A delegation of the Argentine Rural Society will shortly visit Belgium to select fine cattle for breeding purposes, which are intended to be substituted for Durham stock, by many Argentine cattle raisers. Some day it may be possible for California breeders to attract buyers from that country.

Reports from reliable sources in the east, are to the effect that the coming year will witness the starting of a big shortage in sheep, and feeders are already wondering how they will acquire a sufficient number for this year's feeding lots. The report states that what has happened in pork and beef may soon be expected with mutton.

The Rowen Horse and Cattle company, of Bishop, Inyo county, have recently started a herd of registered Ayrshire cattle, on their ranch at that place. They have an imported bull as herd sire.

Three tons of salt was recently shipped by Humboldt county cattlemen, from San Francisco, by parcels post. It is said that this was cheaper than shipping by freight would have been.

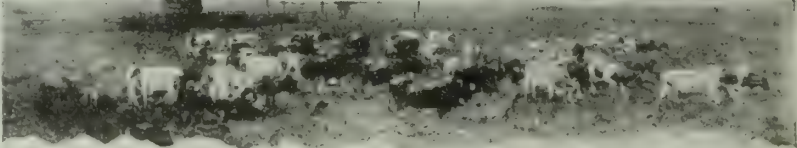
The report that the Southern Pacific company were about to restock their ranges in Shasta county, is emphatically denied by James O'Gara, district passenger agent for that company.

A serious outbreak of cholera is reported from Atwater, Merced county, and it is feared that several hundred head will die as a result.

Due to mid-season, between feed lot and grass runs, cattle liquidation at the Portland Union Stock Yards, was smaller for the past week. Prices for the week were \$7.75 to \$8 for best grain fed steers; \$7.50 to \$7.75 for hay steers; \$7.25 to \$7.60 for best grade grass steers. There was a good call for prime dehorned cows and heifers, butcher stock being steady all down the line. The demand for hogs was better than last week and there was some increase in receipts, tops selling at \$7.85 to \$7.90. The receipts of sheep and lambs was moderate for the week, and demand was improved. Fancy yearlings sold for \$4.85 to \$5; old wethers \$4.25 to \$4.50; ewes \$4 to \$4.25; lamb trade firm, spring stock selling readily at \$6.



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ONE ton of Larrowe's Dried Beet Pulp contains as much nutriment as five tons of silage—and in addition is clean, healthful and succulent. It is a wonderful milk producer; convenient; economical; always ready at any season.

Read what H. F. Holmshaw, Colfax, Cal., says:—

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Pomona, Cal.

A Holstein Breeder's Barns.

[Written for the PACIFIC RURAL PRESS.]

The erection of convenient and sanitary dairy buildings, is a subject which seems well worthy of consideration at this time and one that most progressive dairymen are paying a great deal of attention to. Better barns are necessary not only for the production of better butter and for the protection of the cows in bad weather alone, but also as a means of saving labor, which in the end means dollars in the dairyman's pocket.

The breeder of pure-bred cattle is as much or more interested in this phase of dairying as others for the old saying, "A cow well raised is half made," pertains especially to his business, and while we do not have the extreme temperatures with our herds, that is experienced in the East, the need for better barns is becoming more pronounced as our breeders become more experienced in the breeding of fine animals. That it isn't necessary to spend large sums of money at one time in the construction of such buildings, was recently seen on the ranch belonging to H. E. Cornwell, near Modesto, although his experience tends to show that one should have a definite plan outlined and work toward that end. Like so many who have gone into the breeding industry in this State, Mr. Cornwell started with moderate means and a few head of registered cows in connection with the grade cows which he was depending upon for his living.

At first the building was erected with a shed roof, being 90 ft. long and 16 ft. wide. The manger was made of concrete, as well as the floor, the latter having a fall of 1 in. to 10 in. A gutter 5 ft. and 3 in. from the stanchion was run lengthwise of the floor, being 4 in. deep and 12 in. wide. Steel stanchions were installed, which combined with the concrete floor and manger made the milking barn easy to keep clean.

This, however, was only the first unit, and was later enlarged by an addition to the roof, thus forming one side of a larger gable roofed building. A space 16 ft. wide was left through the centre of the enlarged building, which is now being used for a hay mow and will later be used as a drive-

way for wagons which will be used for hauling feed directly from the stack to the manger. All of the building between this drive-way, and the other outside wall, which is 16 ft., is being partitioned off into pens 10 and 20 ft. wide for the protection of the herd-bull, cows that are calving and calf pens. These will be connected by doors to outside corrals which will give the animals places to exercise.

Later a hay barn will be erected on the east end of the present building, which will be large enough to afford shelter for the cows in the corral. In this way most of the feeding will be done outside of the milking.

The manner in which the work of improving the building has been done is on the same general plan carried out with the herd of pure-bred Holsteins, for from a small foundation of cows that possessed good breeding, many of their offsprings have developed into heavy producers, as well as good show animals as was evidenced at the California State Fair last year.

In the building up of the herd, both grades and pure-breds a great deal of credit is due to the herd sire Josephus of Ceres, for he has transmitted the producing powers of his ancestors, as is shown by the records of the Modesto Cow Testing Association, of which Mr. Cornwell is a member.

Among those that have been tested, during the past year, are the cows: Senorita, a six-year-old, with 14,794 pounds of milk, containing 621.6 pounds of fat. Ina, a four-year-old, with 11,904 pounds of milk, containing 400.5 pounds of fat, and Joe Aggie Peiterje, a two-year-old, with 9330 pounds of milk, containing 321.3 pounds of fat, and many others with extra good records.

In fact, in looking over the records of the herd it was easy to see that high production has been largely due to the herd sire, and Mr. Cornwell has just reasons to feel proud of his selections, especially in view of the fact that these were all made under normal California conditions, with alfalfa as the sole ration.

To quote Mr. Cornwell, "The sledging has been hard for me, due to a lack of capital all the way through, however, I believe that my experience

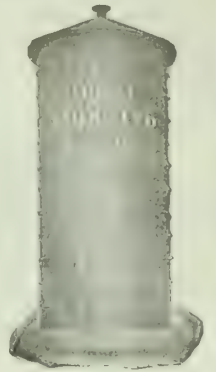
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The Ideal Green Feed Silo has many practical patented features which are necessary to keep and preserve ensilage. A little investigation will convince you that it will pay to erect a silo.

The next question is "What silo?" You cannot afford to experiment.

You want a silo that by many years of use has proved its worth.



Profit by the experience of others who have built cheap home-made re-sawed silos in order to save a little expense in the start and later on replaced them with the Ideal Green Feed Silo.

Your wife wouldn't experiment with a leaky can or jar for putting up fruit, etc. Then, why should you take a chance on your ensilage put up in a common water tank type of silo when you can buy an absolutely air-tight tongued and grooved Ideal Green Feed Silo that has been used successfully for the past twenty years?

Write for silo folder B for full information.

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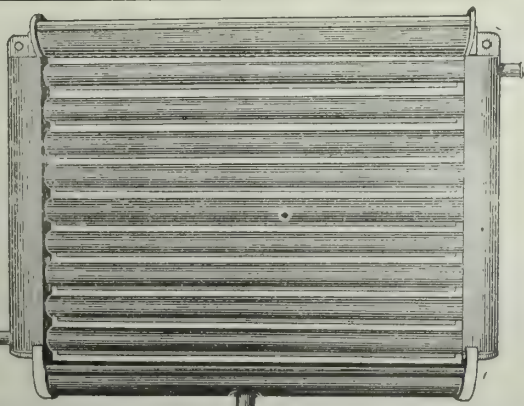
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447 W. Main St., Stockton, Cal.

New Herefords for California.

The following communication from R. M. Dunlap, herdsman for the Simon Newman company's herd of registered Hereford cattle, at Newman, Stanislaus county, is self explanatory and is of interest, inasmuch as it shows that good beef bulls are scarce in the east, as well as in California and that this firm is awake to the future possibilities of the "white faces" in this State.

He says: "I wish to report the Simon Newman companies registered herd of Herefords doing fine; all in the hills where feed was never better. Our show herd is the best I ever saw off the grass. The bulls of the 1914 calf crop is in evidence, the feed is dry in the hills, and these with their mothers, will soon go down into alfalfa.

"These youngsters were sired by our two Beau Donald bulls, Young Donald 315532, and Beau Stanley 37237. They are being assisted by a couple of good two-year-olds that we purchased while East, last March.

"While I visited probably twenty herds and saw hundreds of wonderfully good cattle while in the East which I assure you was a great treat, I soon found the available ones which I wanted. Such cattle were scarce indeed, and that the field was full of hunters from all parts of the country was evidenced by the many people looking them over. The game seemed to be to find the quarry, then land your bull and count the cost when you had more time. There simply is not half enough first-class herd headers to go around, and the bulls for range men while of a better quality than in the days of cheap beef, are selling much higher, quite often reaching the \$500 mark. Most of the breeders are steering their bulls, that are not just up to the uniform standard of the herd.

"I was not long locating the grand young bull Hesiod Lad 394408, calved April 25, 1912, owned by J. W. Lennox of Independence, Mo., who was breeding him to twenty of his best heifers, and at first refused to price him. He is a low down, wide out thick, and even fleshed, well balanced bull, with plenty of bone, weighing 1500 at the time. He is a choicely bred Hesiod Anxiety and should cross right on our Beau Donald heifers.

"In the meantime I had bargained for Beau Defender 45464, calved May 10, 1912, owned by Mr. Hullinger of Greenwood, Mo. He is much of the same type as Hesiod Lad, and should make a good report of himself as a sire.

"Mr. Lennox finally priced Hesiod Lad. I bought him and cut the last string on my purse, and shipped him home, reaching Kansas City, February 28, shipping for home March 19 and reached home March 28, a very quick trip, and I assure you, California looked good with her carpet of rich grass dotted with many colored flowers.

"I expect to see several of the best herds of Herefords in the East at the Exposition next year, as they are making preparations to exhibit here."

CARE IN SALTING HAY.

To the Editor: Long ago I heard it said that salting hay when stacking was good for it and made it more palatable, and yet I have never known

any one to salt their hay. It looks like, if it were a good thing it would be in general practice. In your issue of May 2 there is an unsigned ad urging the use of 20 pounds of salt per ton for all kinds of hay. Now I want to know if that is proper; will salt preserve hay and will stock eat it better than unsalted hay?—P. A., Lodi.

"Salting the cows is the only legitimate way of watering your milk; but if you feed salt in the rations, be mighty careful not to feed too much. That gives a cow the scours, puts her off feed, and reduces production. Cows in official tests have sometimes eaten 3 ounces of salt per day.

"A 1200 pound cow will eat 5 tons of hay per year. (Six tons is often considered a dairy cow ration.) Twenty pounds of salt per ton forces her to eat 4.4 ounces per day or reduce her feed and milk flow. That is too much salt. We mix about an ounce in a day's rations of ground feed and keep pure salt available where they can get it if they wish more." G. L. Stearns, Dairy Foreman, Stanford Vina Ranch (of 250 dairy cattle.)

"Under normal conditions, the cows of the Station herd received about 2 pounds of salt per month and do not care for more." Dr. S. M. Babcock, Wisconsin Experiment Station, reporting salt feeding experiments covering 15 months, probably the longest official experiment of such character.

"An ounce of salt per day is all that the average dairy cow needs." Prof. G. H. True, California University Farm.

While some stockmen do salt their hay and ground feed, we find no warrant for this practice in the literature on the subject. Hay properly stacked does not get musty and we do not know that salt would prevent it anyway. Since spontaneous combustion is aided, rather than hindered by the excess moisture said to be gathered by the salt, we would on the face of it, hesitate to say that addition of salt would have any effect at all in preventing spontaneous combustion.

Dr. Babcock recommends in italics that salt be kept where cows can partake ad libitum, and this seems to be the only absolutely safe way to feed all the salt an animal needs and not too much. Mixture of too much with the feed will work in one of two ways: either the animal will stop eating when it gets enough salt and thus not get enough feed, or it will eat too much salt in order to get enough feed. Aside from the economic loss would be the humane consideration of how you would like your food served too salty without a chance to growl at the cook.

On the other hand, Robert Holcomb, secretary of the California Creamery Managers' Association says he used to weigh 20 to 30 pounds of salt per ton of hay in the central states and the cows were not injured.

Secretary Andreason of the State Dairy Bureau used to salt his hay without weighing it definitely and thinks 20 pounds would be safe anywhere even in the coast counties or on alkali soils.

Henry Miller of Miller and Lux approves the use of 20 pounds or more in stacking hay.

Thus do authorities differ.—EDITOR.]

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MISCELLANEOUS.

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Woodland, California

Draft Horses in Inyo County.

[Written for the PACIFIC RURAL PRESS
by WM. D. GUTHRIE.]

Ed. Dunn, of Independence, Inyo county, believes that the time to go into any business is when the other fellow wants to sell. When others were offering their well bred and heavy brood mares for sale, he bought, not because they were cheap, but because he could see a future in the heavy-horse business.

This last year Mr. Dunn took a trip to Los Angeles and made a personal visit to the barns of the big transfer companies. He made note of the kind of horses they were using on their drays. He called on the managers and got a lot of information. Among other things, he found that in spite of the auto-truck, horses are still being used by the transfer companies in large quantities; that the trade called for a horse about 1600 pounds; and that it seemed to prefer Percherons. Consequently, Mr. Dunn is starting to raise what the city wants, and is not going to try to force a product on the market that is not in demand.

In this ranch there are something like 59,000 acres, most of which is mountain range. The valley division is being leveled and seeded to alfalfa, thus furnishing feed through the winter months. In the spring all the young stuff, mares and colts, are driven to the mountain pasture. Like all mountain ranges, this one is more or less rocky, consequently, the continual treading on rocks and stones toughens the hoofs and tendons of the legs, thus developing animals that will last much longer on city pavements than those grown entirely on moist valley land.

While Mr. Dunn has just started in the horse business, in the face of a falling market, and deserves credit on that score, one must not fail to mention William Rowan, who, in 1882, brought the first draft stallion into Owens valley. This was a Percheron, which he mated to native mares. Since that time he has used Percheron stallions in grading up his stock, until just recently when he bought a Clydesdale and is now using him on his high-grade Percheron mares. This cross has produced a fine crop of big flat-boned colts. When these colts come to maturity, he will cross again with the Percheron. In this way he believes that he will get a better seller than the straight Percheron line would make possible.

Some of the best draft horses seen on the streets of Los Angeles were grown by Mr. Rowan. At the present time he has a contract with the Cudahy Packing Co. of that city for a certain number of horses every year. They must all be grays, as horses of that color are supposed to stand the heat the best.

There are other horsemen in Owens valley that we have not mentioned, but with whom we talked and of whom we asked numerous questions. On some things they disagreed, but on the way to grow a colt they held together pretty well. Their answers can be trimmed down to just seven words: "Feed him well and keep him growing." Oats is considered to be the best grain to feed. He must have plenty of water.

Owens valley, like many other parts of California, is an alfalfa country; consequently alfalfa is the principal feed for horses. For horse hay the

alfalfa is left standing until it is about two-thirds bloom before cutting. This makes a richer and stronger feed, containing more of the nutrients essential in the development of bone and muscle. Also, it does not affect the kidneys like hay made from alfalfa cut when just beginning to blossom.

According to the horsemen in this valley, the man that raises horses for the market in the future must produce an article that the market demands, and he will not experience trouble in finding buyers. They do not say that horses will be as high again as they were two years ago, but they do hold that there will be a good fair profit in the business. They consider that the man who at the present time has no brood mares, or small inferior ones, cannot make a better investment than picking up, while the market sags, the very best mares to be found. As Mr. Dunn says, farmers should take advantage of the other fellow's weakness and get into the heavy draft-horse business right.

EXPERIENCE WITH ESSEX SWINE.

To the Editor: In a recent issue of your paper I noticed an inquiry from Elk Grove for a small-boned Berkshire or Poland-China breed of hogs. I desire to call the attention of PRESS readers to the Essex hog, of which breed I am owner of probably the only herd in California or on the Pacific Coast. As my monopoly is yet but an infant industry, I do not offer this article as an advertisement, but merely to furnish information concerning this little, chunky, quick maturing, light-boned hog, of which so many people apparently know but little. My own selection of breeding stock of this type of hog was due to a belief that the larger breeds do not fit our conditions as well as those in the corn-belt States, and that the limit of their popularity would eventually yield to the smaller type of quick-maturing, easy keeping, light-boned hog, which will prove more profitable to grower and more satisfactory to market men. From my own experience the Essex has more than fulfilled my expectations. They are good feeders and good breeders and less carnivorous than some other breeds. On short pasturage they have proved good rustlers, which duty they manage to perform in their characteristic quiet way, always keeping fat. They will turn off at a younger age with less feed than some other breeds. The sows are good mothers and average well in prolificacy. The young are very thrifty from birth and sustain the fattening habit from the start. They mature at 9 months. The meat is fine grained, sweet and juicy and well streaked with lean for a lard type. Their quiet, easy disposition makes it possible to keep them under lighter enclosures and give better care and attention to the young pigs, which means a larger percentage of marketable product.

The Essex is a distinct English breed and consistently maintain their chunky compact conformation and solid black color and are practically immune from sunburn and mange.—L. W. MILLSAP.

[In his book, "Swine in America," F. D. Coburn, has the following to say about the Essex hog: "They are a

small black hog, that has been known in America since the early part of the nineteenth century, but have never secured a very wide popularity. It is more especially adapted to raising in a small way for family use than for commercial purposes. The Essex of the United States and the Small Black or Suffolk of England, are said to be practically the same. They are good feeders, early maturers, and pro-

duce meat of excellent flavor but with a large proportion of fat." It will be interesting to learn the results of future experiments with this breed in California, as there is still plenty of room for improvement in our swine raising practices.—J. C. L.]

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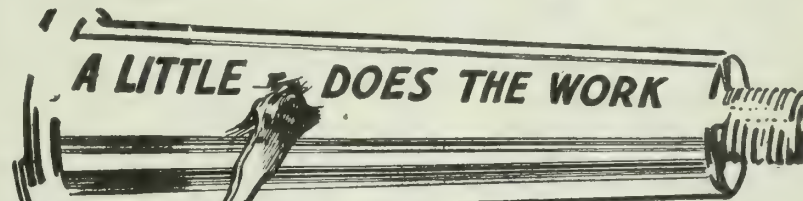
In 1909, its first year, sold 200
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201 Main St., San Francisco

Indigestion in Poultry: Its Cause and Cure.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

This trouble is more common with poultry than any other disease except roup; and it is the least understood. Because fowls have no stomach, it is hard to make people believe that they can have indigestion, but the fact remains that they do have it; also that the poultry suffer from the owners' prejudices and get treated for some wrong complaint. The cause of indigestion is not always apparent, because it may date back to something that has been overlooked or forgotten. It may be overfeeding, or persistent feeding of some one thing that has had an irritating substance in it. As a rule, indigestion attacks hens that have been fed on too much concentrated food and not enough green feed. In all well balanced rations there is enough green feed to act as an emulsifier; this softens and lubricates the food so that when it passes on, the natural juices mingle and everything is harmonious.

Again, lack of exercise may be an exciting cause; the feed is too easy

to obtain, and the hens fill up without exercise or without sufficient to set the gizzard to work. Nature never intended a fowl to fill up at once or it would not have to pick each grain up singly. These things should all be remembered if we expect to work a cure.

A flock of dyspeptic hens is usually a lazy flock, hence the first remedy to apply is exercise. Freshen up the poultry house with a coat of white wash, spade up the yard and sow barley or oats in it for the hens to scratch out. Provide scratching material and feed all grain in the litter, which should be a foot deep, at least. Decide on a well balanced ration and stick to it, feeding sparingly and keeping the hens hungry every day until night. Even then they must not be allowed to gorge themselves, but get fairly full crops. See that the water supply is looked after and the vessels clean. To make sure of the latter, scald them out well once a week with lye water, rinsing in cold water.

Beginning with exercise and proper feeding, at stated times add one teaspoonful of powdered magnesia to each quart of water. See that the fowls get no water that has not this proportion of magnesia; and keep this up for one week. Then for two weeks give one-eighth of a grain of strychnine to a quart of water. If for any reason you are afraid of strychnine or cannot obtain it, give five drops of muriatic acid in a quart of water. In this case, the water must not be put in tin or iron, but in earthen crocks.

And yet another excellent remedy is nux vomica. Tincture of nux vomica should always be kept on hand by poultrymen; for a few drops in the water once in a while acts as a purifier and cleanser. For indigestion, let it follow the magnesia in every case, as the magnesia is needed first. Then add five or ten drops of the tincture to every quart of water and keep it up for two weeks, by which time the hens should be in fine condition. In cases where the indigestion takes the form of driveling of water, indicating crop troubles, the muriatic acid will be found to act quicker than the other remedies.

But remember all these things must be handled with care; they are not foods, but poisons, and must be handled as such. But when a fowl has indigestion the whole intestinal tract is in a sort of poisonous ferment; and so it is a case for similibus.

Questions and Answers.

Dear Madam—I have two strains of Plymouth Rocks, and I don't want to mix them, my intention being to keep the hens from one strain and the roosters from the other. How can I keep them apart? Is there any system of tagging which I can use to put on the little chicks until the time comes when I will have to segregate them?—H. H. P.

Answer: The best way is to buy a Pettit poultry punch, price 25 cents, at any poultry supply house. Send the coin to Coulson's, Petaluma, and they will return your punch by mail. Now punch a hole in the web of the foot of each chick. Punch one strain in web of right foot, and the other in

web of left foot, put a drop of olive oil on each hole, as that helps to keep it open. If your memory is not perfect, make a note of which strain is toe-marked on left foot and which

POULTRY BREEDERS' DIRECTORY

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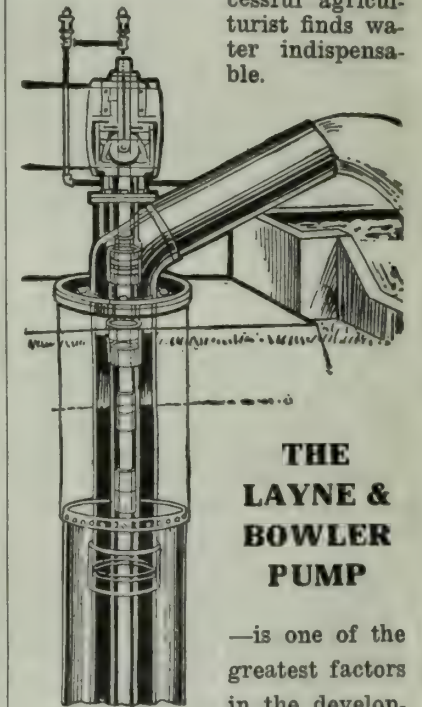
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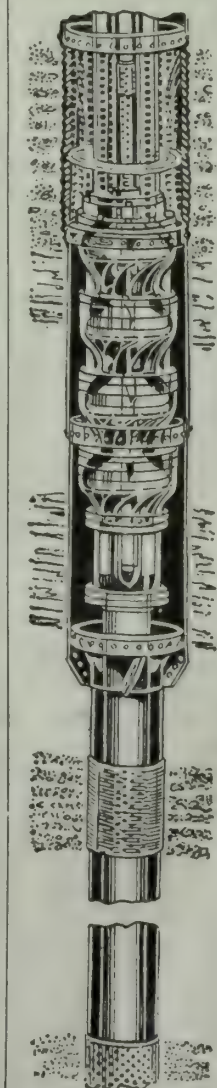
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Nor on the fowls that roost on them.

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We Guarantee—

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- 4—Lower mortality among hens fed to force a high egg production.
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CONTAINS 28% MORE EGG LAYING PROTEIN than beef scraps, and is pure, fresh, and sweet. TRY IT!

"Pacific Pioneer"

(Reg'd Trade Mark)

Write for free sample prices and feeding test reports.

WESTERN TALLOW CO.
38 Beale St.
SAN FRANCISCO, CAL.

on the right. Then you have this record to fall back on. This is a better plan than putting bands on, for the chick's leg outgrows the band and then you are as bad off as before. Keep an eye on the holes and keep dirt out; for sometimes they close up. You can mark at least five generations of chicks with that 25-cent punch.

Question: I would like to know why my chickens lay watery eggs? When I put the eggs in the frying pan they spread all over the pan instead of standing up. The first I noticed was last fall; they got all right during the winter, but now are watery again. I also notice that when they are boiled hard the yolk has a green tinge all around the outside where it fits into the white.—Mrs. J. M. H.

Answer: As our correspondent does not state what the chickens are fed, it is a little hard to say positively. The indications, however, are that they have too much sloppy feed and not enough good dry grain. The egg is the usual indicator of the feed; nothing makes firmer eggs than a good hard grain diet. If the green feed is of a very watery nature and not enough grain to offset it, the eggs will be watery. Again, if the nests are in a warm, moist place, that might have a tendency to make the eggs run; somewhat like eggs that have been a few days in the incubator. It is impossible to be too careful in handling eggs, or in feeding for them; for the food a hen eats makes all the difference in the quality of the eggs produced. It might help if you were to give the hens a tonic and feed them more grain until they get over this failing.

The following tonic has given very good satisfaction to those who have tried it. Of course, it need not be continued for more than two or three weeks, but I am sure you will notice a difference in just one week:

Tincture of red cinchona, 1 fluid ounce; tincture of chloride of iron, 1 fluid drachm; tincture of nuxvomica, 4 fluid drachms; glycerine and water to make 4 ounces.

Give one teaspoonful in one quart of water, allowing no other drink.

This tonic can also be used for indigestion, but hens do not like it; so care must be taken to keep other water away or they will not drink that containing the tonic.

All domesticated animals or birds are more or less subject to what one might term a lack of vitality at times and yet be all right at others. In a state of nature, only the fit survive; but when domesticated, we care for the young and raise them whether fit or not. So we must expect poultry as well as animals to have weak traits if not carefully culled.

Still, in justice to the poultry, it is only fair to say that they often do better than we deserve; for nearly every feeder makes big mistakes for which the hens must suffer. It cannot be too frequently told that this method of stuffing chickens with dry and moist mash is the frequent cause of hen ailments. While a little is good, the average feeder seems to think that a whole lot is better; and according to his way of thinking, he just crowds the hens with mash seven days a week, and sometimes it stands before them all day and night too.

In order to make money with poultry it is necessary to feed well to get the eggs; but at the same time the stock must be watched and the minute they show signs of any ailment

or anything goes wrong with the digestive tract, cut out the mash and give the hens a rest by changing the food. A little more animal food, a change in green feed, and whole grain for a short time often sets things right without any other treatment.

FROM CITY TO POULTRY.

(Continued From Page 685)

Running water is provided under pressure from a tankhouse.

Eggs are not sold locally, but are expressed to Sacramento and San Francisco, partly to regular customers at considerably better than local prices.

Personal attention and good care, love for the work, records of production, and culling of poor producers combine profit with satisfaction for this city-bred farmer and his happy family.

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FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

COMPETENT ENGINEER, large experience, wishes position take charge ranch; preferably large acreage to be developed and irrigated; best references; straight salary or part interest. Box 214, Pacific Rural Press.

WANTED TO BUY about 20-acre ALFALFA RANCH, or first-class ALFALFA LAND. Bargain only considered. Give full description; state lowest price. Am no agent. Ranch wanted for home. Box 12, Pacific Rural Press.

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WANTED—Dried fruits, nuts, honey beeswax, beans, etc. J. E. Lawrence 326 Clay St., San Francisco.

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STEAM HARVESTING OUTFIT FOR SALE—BEST ENGINE, HOUSER-HAINES HARVESTER (SEPARATOR NEW), OIL WAGON, WATER WAGON, COOK HOUSE, TOOLS, ETC., everything complete for the field. ALL IN FINEST CONDITION and offered at a BIG BARGAIN. Terms. Entire outfit can be seen in Stockton. STOCKTON ICE & FUEL CO., 33 South Eldorado St., Stockton, Cal. PHONE 47.

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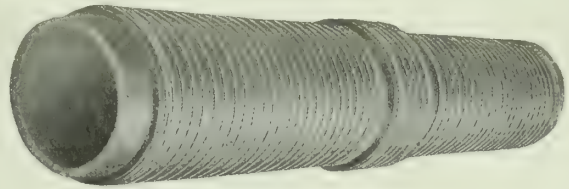


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FOR SALE—From 1000 to 3000 acres U. S. patent land; 300 acres irrigated; 250 dry farming; improved, houses, barns, fence; \$20 per acre. Wm. H. BROWER, P.O. Box 2036, Angels Camp, Cal.

FOR SALE, or will subdivide, 160-acre improved ranch; 50 acres in orchard; in the famous fruit belt of Nevada county. For particulars, address Mrs. M. J. THOMAS, Nevada City, Cal.

8-ACRE RANCH; 4 acres young prunes, 50 chicken houses; ideal situation; good house and outbuildings; \$6000. F. PETRAY, Healdsburg.

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AVOCADOS—Seedlings, 3 to 8 ft. 60c to \$1. Budded trees, \$3. All field grown. Discount on quantities. Magnolia Nursery, Whittier.

Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

The Home Circle.

Country Life.

[Delivered at the State Fruit Growers' Convention by Mrs. EMILY HOPPIN, Woodland.]

The exodus of people from the farms has been made a subject of investigation by both state and national commissions, and has resulted in recommendations concerning education, moral influences, sanitation and economic conditions.

The truth is that the farming of today is a science; not even as a common laborer is there a place for the man with "the emptiness of ages in his face," "the peace of the plant, the stone."

The country life needs alert men and women with minds trained to grasp not only the possibilities of the soil, but the needs and possibilities of their own lives.

In this paper, I shall speak of country life only as observed in our own little corner of the country, though no doubt conditions are very much alike in most, if not all of the states; and I shall speak of country life from two viewpoints; the economic and the esthetic.

Everywhere we hear of the "back-to-the-farm movement," and of plans to keep on the farm the girls and boys already there. It will be no trouble to do either when the city boys and girls are taught something of the pleasures of agriculture, and all are convinced there is money in sight.

Two things take the young people to the cities; one is the social life, the other the dream of more money; then too, the life seems easier. All things seem possible to them.

They think it comes for the thinking and asking. They know nothing of the struggle for place, the sordid life, the hand-to-mouth existence of the workers of the cities. They have seen the long working hours of the country, the fluctuating seasons, and they think city life and work spell success. They do not realize that the years of struggle in the cities do not in many cases, even bring a living competence for old age. Neither do they realize that many times false ideals of life are created for their children.

The ideas of country life need rearranging, for the country life of today is so different from that of fifty or even twenty years ago. The telephone that is in every home with central in a town, brings not only neighborhood communication, but puts one in direct touch with the cities.

The roads are a large factor in a contented country life. When California brought before the voters, her \$18,000,000 bond issue for a great highway connecting county seats, the people voted "yes" gladly, with the thought that each county would have one convenient, well-kept main thoroughfare.

This has proved a delusion. The road commission has in at least one county, paid very little attention to existing roads, but has made it their object to reach a given point in the least possible time, and are paralleling the railroad, which necessitates buying expensive rights of way, and building a road that the general public cannot use with safety.

In our long, rainy season, it means everything to country people to have for their use a well-built road; it means equally as much during the six

months of sunshine. It is a great pity that the peoples' money should go toward constructing roads that are not for the direct benefit of the people who live near them. It will be a long time before the automobile will come into general use as a carrier. Although one is found on many farms, it is only for family use. The good old horses still draw the loads of farm produce, that have to be quickly and cheaply carried to market. The good roads should be primarily for the use of the farmer, and not the pleasure seeking automobilist.

The schools can enter largely into both the economic and esthetic conditions of country life. The school gardens, and school agriculture can help not only the development of nature study, but can help character building. They can teach not only industry, but other secrets of ethics. The planting of the flower seeds, the bulbs and tree seeds in the school plots of grounds, may in later years send the city boy to the country, and hold the country boy in his home, for the care necessary for the growing things, unconsciously brings a love for them, and as they develop day by day, they gradually seem a part of one's life.

Another incentive to country life is reasonable interest on money to move the crops quickly, and to invest in land. Few purchasers of farms have enough capital to fully pay for them. Sowing alfalfa and putting out orchards cost a great deal; stock is high priced; the farmer has to borrow, and then wait (as in the case of fruit) several years before he realizes from his investment. He goes to the bank and borrows the money at from 6½ to 8%. He could easily pay the loan under ordinary conditions; but alas! the Lord does not always send his rains on the just; he is very likely to send the north wind instead; sometimes, even without old age, the grasshopper is a burden. All these things are not money makers, and our farmer is harassed by debt before he realizes. The government loans money for 2% to the same bank that loans it to the farmer, for 8%. If the farmer could borrow directly of the government at, say 3%, pay every year on the amortization plan, say 6%, half of which should go on the interest, and half on the principal, it would do more than any thing else to help out the back-to-the-farm movement.

The currency bill, now before Congress, while it helps the farmer somewhat, does not reach the man who has no credit with his local bank. He must have some help to acquire land. There is in cheap interest a possibility of inflated values, and unnecessary borrowing; but these dangers are small when compared with the advantages of acquiring a home without the tremendous drawback of high interest, the possible failure of crops, and the worry over "What shall I eat, and what shall I drink, and wherewithal shall I be clothed?" Add that that, "How shall I pay for labor?" and you have the problem that is not only driving the boy from the farm, and keeping the city boy from the farm, but is keeping the immigrant from the land.

A man comes with \$10,000; buys forty acres of land, builds some out-buildings, and a small house; buys some stock, puts a mortgage on his place, and settles down to easy living, for has not the real estate dealer figured it all out? Fifteen acres of alfalfa, 12 tons to the acre, \$10 per ton, aver-

age price, cost of production \$5 per ton, bet per acre, \$60, or \$900 for the fifteen acres, or he can keep cows on the fifteen acres, and have a new profit of \$1800; then he can have fifteen acres in fruit, the smooth tongued real estate dealer easily figures a net profit of \$2500 a year from fifteen acres of fruit; he is also to have eight acres in raisins, they will bring him a net gain of \$200 an acre or \$1600. The real estate man tells him a wonderful story of Jones, who came to the country ten years ago with his earthly assets on his back, and he is now a rich man from raisins. No wonder our buyer is dazed with our glorious California, think of it! A yearly income of nearly \$6000 from an outlay of \$10,000. Why should a mortgage fret him?

He sees just before him a six-cylinder car, an up-to-date bungalow, a hammock on the piazza, and in it a man who looks like him, taking his ease. The mortgage is paid and all he has to do now is to lie in the hammock and cut coupons. This is all true, for he has seen the figures and figures don't lie. If only the man who wrote the figures, didn't lie either, the millennial days would be at hand. In five years, our friend is a sadder and wiser man. He had dropped on to Elysian days too soon.

There is no royal road to fortune on the small farm. You have to use your head and your hands; but for the clear-headed, industrious man, there is a competence and a cheerful, comfortable old age, if he is willing to do his

This is the Age

of sanitary packages. Unhealthy, germ and dirt exposed bulk chocolate should be avoided. Specify "Ghirardelli's Ground Chocolate" sold only in hermetically sealed cans.

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part. Even debt need not always daunt him; it need never daunt him if our patriarchal Uncle Samuel will come to his help. It would be a paying thing for Uncle Samuel, too; 3% instead of two; each year some of the principal coming in to help other men to start, and best of the consciousness of helping bona fide settlers, and of taking from the city income of the trouble making element.

It is the men of the cities who brew the witches' cauldron of discontent, and envy, and anarchism. Take these men from the city, let them acquire a competence, and their radicalism quickly changes to conservatism.

Another help to the back-to-the-farm movement, would be the going there of some of the philanthropists, who sitting in their easy chairs, plead with their brothers to go back to the land—go back to the land; yet who do not lead the way. The country has fine possibilities for the man of wealth. Machinery has the cost of production down to its minimum; the electric roads are already beginning to interlace the country, bringing the city within a short ride; money could have the beautiful home, the complete water and lighting systems; the comfortable automobile, all the advantages of the city with the disadvantages of the country without the disadvantages of either.

The country church could have a large influence on country life. As it is now, it has very little. The country as well as the city needs men of ability. The young men and women of the country are not only high and normal school graduates, but our colleges and universities have a generous percentage among them. It is a mistake to send men of mediocre ability to the country church.

The social life is a very important factor in a happy country life. The clubs are in the vanguard of those who have helped to make it count for happiness. Clubs are scattered now through most county communities; not only the purely social club, but those that help to form the literary tastes of the country people. The county libraries, the farmer's institutes, the university farm, and the university extension through its correspondence courses are doing a wonderful work in helping to raise the economic life of the farm to a more productive plane, and at the same time, create higher ideals for the

social and intellectual life.

It is a sordid philanthropy, however, that does not try to touch our inner life. What is the money, what is the intellectual life compared to the growth of the soul, the love for the beautiful and good? Of what use to one is the beauty of the country if he has not eyes to see?

"The primrose by the river's brim, A yellow primrose was to him, and nothing more."

Part of the mission of the public schools ought to be the cultivation of the esthetic part of our nature; otherwise the farm life becomes a dreary monotony. One summer I had occasion to take an eight-mile ride twice a week for several weeks. There will always be in my mind the picture of those beautiful mornings when the earth was just awaking from her night's sleep, when the clouds lay in long white bars across her breast; when in the distance the snowy Sierras showed white, and crimson and gold, as the rays of the morning sun touched their summits. They were mornings to remember, when,

"Over the valley, in early summer, Over the mountains, on human faces, And all around me, moving to melody, Floats the gleam."

Even the summer days of the hot valleys have their compensations. The heat for four hours lies in shimmering waves on the hot ground, the leaves of the trees droop, and you long for the ocean waves, or the cool mountain brook under the trees; then suddenly a cool breeze stirs among the trees; and as soon as the sun has set, the evening comes with its long twilight, and its wonderful star-lit-nights! They are nights to remember.

The work, too, has its compensations. To make the soil do its best; to see the grain, the trees, the vines, the flowers growing and know that you have helped to make their beauty; to care for the gentle animals that repay so well your care and affection; to hear the birds that year after year come back to you to rear their young; these are really joys to the eyes that see, and the ears that hear; yet one who has not experienced them cannot realize that there is in the country not only a living, but a pleasure and a growth for the soul.

"There are the things I prize, and hold of dearest worth.

Light of the sapphire skies, peace of the quiet hills.

Shelter of forest, comfort of the grass, Music of birds, murmur of little rills, Shadows of clouds that quickly pass. And after showers, the smell of flowers, And the good brown earth—and the good brown earth. And best of all, along the way, friendship and mirth."

The *Green Bag* tells of an instance where the accused was so well pleased with the *personnel* of the jury that he did not challenge any one; but, when his counsel whispered that it was strange, he replied, "The jury" all right, but I'd loike to challenge the judge."

The self-made man was speaking. He said: "My father was a raiser of hogs. There was a large family of us"—and then his voice was drowned by the applause.—*Life*.

Butler: "How's that suburban cemetery scheme of yours doing?" Hustler: "First-class! All I want now is to get a few live men in it."—Puck.

A.C.C. COFFEE

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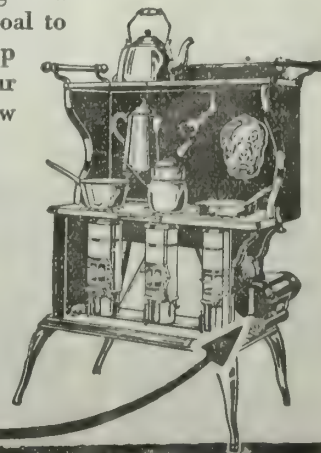
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THE MARKETS.

San Francisco, June 17, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

No further change appears in quotations, and the local market is fairly steady, with no very large offerings, though there is plenty of wheat in the North. Wheat, as well as all other lines of grain, is very quiet, as the new crop is large and buyers are only taking care of immediate needs.

California Club, ctl...\$1.57½ @1.62½
Forty-fold 1.62 @1.67½
Northern Club 1.57½ @1.62½
Northern Bluestem ... 1.62½ @1.65
Northern Red 1.52½ @1.60

BARLEY.

No quotations have yet been given out on shipping barley, though several vessels are getting ready to load, and considerable new barley is going into the warehouses. Spot feed receives only slight attention, but remains at the old level, while the speculative market shows more steadiness.

Brewing and Shipping. Nominal
Choice Feed, per ctl...\$0.92½ @0.97½
Common Feed Nominal

OATS.

There is no quotable change in this market. Offerings are ample for all requirements, which are very small, but holders are unwilling to shade the previous prices.

Red Feed\$1.20 @1.30
Gray Nominal
White 1.30 @1.35
Black Seed Nominal

CORN.

Trading is extremely light, and local dealers are carrying very little on hand. Spot values are fairly steady as last quoted, but buyers are taking little interest in present offerings.

California Yellow Nominal
Eastern Yellow\$1.80 @1.85
Eastern White Nominal
Egyptian 1.85 @1.90
Milo Maize 1.80 @1.85

RYE.

Supplies are pretty well cleaned up, and in the absence of any immediate demand the price is entirely nominal.

Rye, per ctl.....\$1.45 @1.50

BEANS.

No further changes have been made in the local quotations this week, and dealers do not anticipate much alteration of the present list until the new crop comes in. This is due to the fact that there is practically nothing of any importance on hand here. There is still some inquiry, but the movement is now rather small, and there is no longer anything coming in from the country. Spot limas seem to be entirely cleaned up, and futures are firmer, as the weather has been unfavorable for the growth of the plants.

(On wharf.)

Bayos: Cal., per ctl...\$7.00 @7.50
Mexican 4.50 @5.00
Blackeyes 7.75 @8.00
Cranberry Beans 4.25 @6.00
Horse Beans 1.90 @2.15
Small Whites 5.00 @5.25
Large Whites 3.90 @4.50
Limas 6.50 @6.85
Pea 4.25 @4.50
Pink 3.75 @4.00
Red Kidneys Nominal
Mexican Red 6.00 @6.25

SEEDS.

The demand in most lines is very slack at present, and prices are largely nominal, though there is enough stock for all requirements offered at the old figures.

Alfalfa 12½ @15 c
Brown Mustard, per lb.... 3¾ c
Canary 7 @ 7½ c
Hemp 2½ @ 3 c
Millet 2½ @ 2¾ c
Timothy 7½ @ 8 c
Yellow Mustard Nominal

FLOUR.

Current business is very quiet, with buyers in the market only for current needs. The Northern export market may be revived a little by the reduc-

tion of Oriental freight, but this is hardly expected, as the stock in the Orient is large.

Cal. Family Extras...\$5.80 @6.20
Bakers' Extras 4.80 @5.40
Superfine 3.90 @4.20

Hay and Feedstuffs.

HAY.

Arrivals in this market have increased a little of late, but are still rather light, as the movement of the new crop has hardly started. Most of the local offerings consist of old crop grain hay, which is given the preference by local consumers, though some first-cutting alfalfa is coming in. Baling is well advanced, and larger arrivals of new grain hay are expected in the near future. Stocks of last year's crop within easy shipping distance of this market are cleaning up rapidly, and present prices do not warrant shipments from distant points. The early alfalfa is of poor quality and hard to sell, as the dairymen take little interest in it.

No. 1 Wheat, or Wheat and Oats\$11.00 @12.00
do No. 2 9.00 @11.00
Lower grades 8.00 @ 9.00
Tame Oats 8.00 @12.00
Wild Oats 7.00 @ 8.50
Alfalfa 7.00 @ 9.50
Stock Hay 5.00 @ 6.00
Straw, per bale..... 60 @ 90c

FEEDSTUFFS.

Prices have not changed for the last two weeks, and the market shows little feature, with a light but steady demand and no excessive supplies offered at the moment. Bran remains firm, the output being less than usual.

Alfalfa Meal, per ton...\$17.00 @18.00
Bran, per ton..... 25.00 @26.00
Ollcake Meal 34.00 @35.00
Cocoanut Cake or Meal.. 26.00 @27.00
Cracked Corn 41.00 @42.00
Middlings 32.00 @34.00
Rolled Barley 21.50 @22.00
Rolled Oats 28.00 @29.00
Shorts 26.00 @27.00

Garden Truck.

VEGETABLES.

Few changes in price have taken place lately, though a few lines of summer garden truck are coming forward more freely, and show a decline. The demand, however, is fairly good, and most lines hold up in good shape. Offerings of asparagus are rather light at the moment, and the inside quotation on the local market has gone up to \$1. Tomatoes, however, have dropped sharply, and are likely to go still lower within the next week or two, as shipments are rapidly increasing. Cucumbers also have been marked down with liberal supplies, and green corn is lower. The latter is now arriving in large quantities, but the demand has been stimulated by the decline, and values are now fairly steady. Eggplant is holding up steadily to the old quotations, supplies being still moderate, and other lines are unchanged.

Cabbage, per ctl.....\$ 1.00 @ 1.25
Cauliflower, dozen 40 @ 70c
Green Peppers, lb..... 12½ @ 17½
Carrots, per sack..... 35 @ 50c
Green Peas, lb..... 2½ @ 3¾ c
Tomatoes, Southern, crate 40 @ 65c
Beans: Wax 3 @ 5c
String 3 @ 5c
Rhubarb, box 60c @ 1.00
Asparagus, box 1.00 @ 1.65
Cucumbers, box 40 @ 75c
Eggplant, lb. 6 @ 10c
Green corn, sack..... 1.00 @ 2.25

POTATOES AND ONIONS.

Shipments of river stock are now coming along in good shape, but are hardly sufficient for requirements, and considerable Oregon stock is still being sold, with prices as before. A good deal of choice California stock has been going to Oregon lately. Onions are still rather scarce, and prices are steadily maintained.

Potatoes:
River Burbanks\$ 1.00 @1.50
Garnets, lb. 1½ @ 2c
New Potatoes, lb..... 1¼ @ 1¾ c
Oregon Burbanks 75c @ \$1.25
Sweet Potatoes, per ctl... 2.50 @ 2.75
Onions: Bermuda, crate.. 2.00 @ 2.25
New Red, ctl..... 2.00 @ 2.25
Garnet, per lb..... 5 @ 8c

Dairy Produce.

POULTRY.

The poultry market is in worse shape this week than last. Arrivals, while not exceptionally large, are liberal, and the demand is very slow, leaving considerable surplus from day to day. Practically everything in the chicken line has been marked down, and some other lines are also lower.

Large Broilers 18 @19 c
Small Broilers, per lb... 18 @19 c
Fryers, per lb..... 20 c
Hens, extra, per lb..... 18 @19 c
Hens, large, per lb..... 18 c
Small Hens, per lb..... 16 @18 c
Young Roosters, per lb.. 24 @25 c
Squabs, per doz..... \$2.00
Geese, per pair 2.00 @ 3.00
Ducks, doz. 6.50 @ 8.00

BUTTER.

Local butter prices remained stationary for about three weeks up to last Tuesday, when extras showed a half-cent advance. While the market showed some signs of firmness at this figure, the price went back to the old level the following day, a slight increase in offerings preventing the advance from being maintained.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras ...24 24 24 24 24½ 24
Prime
Firsts...23½ 23½ 23½ 23½ 23½ 23½
Firsts ...23½ 23½ 23½ 23½ 23½ 23½

EGGS.

The upward movement started last week has not continued, as extras dropped back almost immediately to 24½c, at which figure they have remained most of the time since. Firsts show no further change, while pullets are a little lower. Some small lots of Chinese eggs have come in during the week.

Thu. Fri. Sat. Mon. Tu. Wed.
Extras ...24½ 24½ 24½ 24½ 25 24½
Firsts ...23 23 23 23 23 23
Selected
Pullets...22½ 22 22 22 22½ 22

CHEESE.

Y. A.'s are ¼c lower, flats being unchanged. Some fancy Monterey cheese is held at 16c, but general offerings are quoted as before.

Fancy California Flats, per lb...13 c
New Young Americas, fancy....14½c
Monterey Cheese 14 @16 c

At Los Angeles the dairy produce markets for the past week have been as follows:

Wed. Thu. Fri. Sat. Mon. Tu.
Butter:
Extras...25 25 25 25 25 25
Eggs 25 25 25 25 25 26
Cal. Cheese:
Flats ...13½ 13½ 13½ 13½ 13½ 13½

Deciduous Fruit.

The local fruit trade is fairly active, but supplies have increased considerably in some lines, and prices have been seeking lower levels. Everything in the berry line is lower, with supplies coming in much better than last week, though all attractive offerings are well received. A few new apples have appeared, but not enough to be worth quoting. Apricots are becoming fairly plentiful, and have declined sharply, peaches also being considerably lower, though there is a good movement in both lines. Plums are steady under an active demand, while pears do not yet receive much attention. Cherry prices are unchanged, the supply being very moderate. Some good-sized shipments of figs have appeared, and prices are much lower, some white figs being down to 75c. Cantaloupes are rather easy, but find a large demand at present prices, while watermelons, though lower, are not yet moving on a large scale.

Blackberries, chest\$ 4.00 @ 5.00
Loganberries, chest 2.50 @ 4.00
Raspberries, chest 5.00 @ 8.00
Gooseberries, lb. 4 @ 10c
Strawberries:
Malindas, chest 2.50 @ 4.50
Banner, chest 3.00 @ 4.50
Longworth 4.00 @ 5.00
Apples: Newtown Pippins 1.00 @ 1.75
Oregon Spitzenbergs .. 1.40 @ 2.00
Apricots, crate 50 @ 90c
do lugs 75 @ 90c
Pears, box 50 @ 60c
Peaches, crate 60 @ 75c
do basket 50 @ 60c
Plums, box 50 @ 75c

Cherries:

Black, box 75c @ 1.00
White, box 65 @ 90c
Royal Anne, box..... 75c @ 1.00
Figs, Black, box..... 1.00 @ 1.25
Currants, chest 6.00 @ 9.00
Cantaloupes, crate 75c @ 1.25
Watermelons, lb. 1½ @ 2½c

Dried Fruits.

The only quotable change is a slight decline in the inside figure for prunes, though the top figure is still being paid for choice offerings. There has been some talk of an easier feeling in this line, owing to the absence of any strong demand in consuming markets and reports of a good crop in Europe; but growers are taking a firm view, and few are in any hurry to sell. In other lines the market is rather quiet. Buyers in the East are holding off, and packers are not much disposed to shade their selling prices, nor, on the other hand, to raise their offers; while growers have no reason to force their fruit on the market before it is dried. The apricot crop seems to be turning out a little better than was first estimated, but the active demand for shipping and canning fruit is keeping values firm. Efforts to depress the price of peaches have not been successful, but there is little movement, either here or in the East. According to Eastern reports, there has been some irregularity in raisin prices for 1914 stock, but buyers are not taking hold, and it is too early to size up the situation. The New York Journal of Commerce says:

"While the Associated still withholds opening prices on 1914 pack seeded and loose muscat raisins, outside packers are making a vigorous campaign on the basis of 6c for choice and 6½c for fancy in 16-oz. cartons, f.o.b. Coast, though they do not seem to be getting many orders from distributors at this end. Seeded raisins on the spot here are moving slowly on lots as needed for present requirements. They are not being forced, and prices remain steady at previous quotations.

"Advices received from California reflect a strong feeling in future prunes on the part of all holders, although prices still show a rather wide range as to seller. For assortments covering 40s to 60s, October shipment, 5½c f.o.b. four-size bulk basis seems to be the best that can be done, while several packers decline to consider offers at anything less than a quarter to half a cent above these figures. In some quarters a general 6c basis is predicted to be a probability of the near future. Spot prunes are in small compass and firm, but as usual at this season there is little demand from consumers.

"For spot or future apricots and peaches demand continues light and prices are nominal, but the market has a steady undertone, as there is no pressure to sell goods in either position."

Evap. Apples, 1914..... Nominal
Apricots, 1914 9 @ 9½c
Figs: White, 1914 3¾ c
Black Nominal
Calimyrna, 1914 4½c
Prunes, 4-size basis, 1914.. 5¾ @ 6½c
Peaches, old and new.... 4 @ 4½c
Pears Nominal
Raisins (in sweatbox):
Loose Muscatels 4 c
Thompson Seedless 4½c
Seedless Sultanas 4 c

Citrus Fruits

All of the Eastern orange markets have been working off large quantities of fruit the past week, but there are still heavy supplies on track. Valencias are demanding the most attention at this time, although the hot weather, competition from early summer fruits, vegetables and cantaloupes keep the market from being active. Navels, Sweets, Seedlings, and St. Michaels are giving way to Valencias. The Valencia crop of Tulare county will be entirely cleaned up this week, and it is the opinion of most shippers that another week or two will see the markets in good shape, as that Valencia will bring better prices and find more ready sales.

An average of 29 carloads of lemons are being shipped daily, mostly to Middle West markets, as foreign lemons have been sold heavily in Eastern markets. A cargo of 8000 boxes

of Verdelli lemons arrived at New York last week, which were far superior to the bulk of foreign stock sold heretofore this season.

The New York auction closed higher on navel, June 15, and lower on valencias, 25 carloads of navels selling for an average of \$1.25 to \$3.15, and 18 carloads of valencias selling for an average of \$1.10 to \$3.20 per box. The Philadelphia auction was steady, prices being somewhat below the above quotations on navels and about the same on valencias.

Best lemons are now on a f.o.b. basis of from \$5 to \$5.50.

Shipments for this year to date from Southern California have been 29,115 carloads of oranges and 1823 carloads of lemons, or a total of 30,938 cars, as against 22,886 cars of oranges and 3684 cars of lemons, making a total of 26,570 carloads, up to this date two years ago.

Arrivals of oranges in the San Francisco market have been rather light so far this week, but with larger offerings of deciduous fruits the demand for oranges is limited, and the top figures have been shaded a little on both navels and valencias. Lemons are firm at the recent advance, as there is a very fair demand and supplies are light.

Oranges: Navels, box....	\$ 1.00@ 2.25
Valencias, box	1.75@ 2.50
Tangerines, crate	75c@ 1.25
Grapefruit, seedless, box.	1.50@ 2.50
Lemons, box	2.75@ 5.50
Limes, case	9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

Reports on the walnut crop outlook show considerable divergence, but it is too early to get any idea of the output. Spot prices are entirely nominal. Association prices for new almonds are not expected for some time and the quotations based on early contracts are now little more than nominal.

Almonds, 1914 crop:	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	Nominal
Hardshells	Nominal
Walnuts, new crop:	
No. 1 Softshell	Nominal
No. 1 Hardshell	Nominal
Budded	Nominal
No. 2	Nominal

HONEY.

There is a very easy feeling in this market as to prices, as there has been a good deal of new honey shipped in and it is moving off slowly. Values, however, are quoted about as before.

Comb: White	12 @ 13 c
Amber	10 @ 11 c
Dark	8c
Extracted: White	7 @ 8 c
Amber	4½ @ 6 c
Off Grades	3 @ 4 c

BEEWAX.

Light	30 @ 32½c
Dark	28 c

HOPS.

Business has been rather dull for the last few weeks, but a few sales have been closed in the last week in the Sonoma district at about 15c for new crop. No great activity is expected, however, until the crop is farther along.

1913 crop	15 @ 17½c
1914 crop	14 @ 15½c

Live Stock.

Cattle are still being shipped to the ranges from Arizona and other outside points, but stockmen in nearby districts are inclined to hold their cattle and sheep. The only change in local prices this week is an advance in sheep and lambs, which are coming in slowly.

Steers: No. 1	7 @ 7¼c
No. 2	6¾ @ 7 c
Cows and Heifers: No. 1 ..	6 @ 6¼c
No. 2	5¾ @ 6 c
Bulls and Stags	3½ @ 5 c
Calves: Light	8½ @ 9 c
Medium	8 @ 8½c
Heavy	7 @ 8 c
Hogs: Grain-fed, heavy...	8 c
150 to 250 lbs.....	8¾c
100 to 150 lbs.....	8½c
Prime Wethers	5¾ @ 6 c

Ewes	4¾ @ 5¼c
Milk Lambs	7 @ 7½c

DRESSED MEATS.

Steers	11½ @ 12 c
Heifers	11 @ 11½c
Veal, large	13 @ 14 c
Small	15 @ 15½c
Mutton: Wethers	11 @ 11½c
Ewes	10 @ 10½c
Suckling Lambs	14 @ 14½c
Dressed Hogs	13½ @ 14 c

WOOL.

There is not much movement here at present, most of the wool in the Pacific States having been sold, while a few growers are holding off for higher prices. According to Eastern reports, the market is strong, but prices are slow to advance, being now at a fairly high level.

San Joaquin	12@14c
Humboldt and Northern....	16@21c
Calaveras	14@18c

HIDES.

Prices are firmly maintained at the recent advance, as supplies are hard to find, but local dealers find the demand hardly as strong as it has been.

Heavy Steers, over 56 lbs.15	@ 15½c
Medium	15 @ 15½c
Light Steers, under 48 lb.	15 c
Heavy Cows, over 50 lb..15	@ 15½c
Light Cows, 30 to 50 lb.14½	@ 15 c
Kip	15½ @ 16 c
Veal	18 @ 19 c
Calf	18 @ 19 c

Dry—	
Dry Hides	25½ @ 26½c
Dry Kip, 10 to 15.....	24½ @ 25½c
Dry Veal, 5 to 10.....	29½c
Dry Calf, 7 down.....	29½c

Horse Hides—	
Salt: Large	\$3.00
Medium	2.50
Small	1.00

HORSES.

A good-sized shipment of Nevada horses was marketed locally this week, being the first sale of any importance in some time. Most of these were of the lighter and medium weights, wagon and delivery stock, conditions being rather unfavorable for drafters at present. The offering was fairly well received, considering the conditions that have prevailed for some time past, but no real snap to the business is expected at this time of year.

Heavy drafters, 1700 lbs. and over	\$275@325
Light Drafters, 1500 to 1650 ..	215@230
Chunks, 1350 to 1500.....	190@210
Wagon Horses, 1250 to 1350..	150@200
Green Mountain Range.....	120@140
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares.....	75@100

MULES.

1200 lbs.	\$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

Special Deciduous Market Report.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

Sacramento, Cal., June 15, 1914.

Reports have gone forward since the beginning of the year that Eastern fruit crops in a great many of the States have been sufficiently damaged by winter weather to eliminate these districts from the field of competition during our marketing season. Though these reports were true as regards the amount of damage done, at the same time certain districts are reported as having full crops. It is estimated that Georgia, which is now shipping peaches in car lots, will market a normal crop of approximately 6000 to 7000 cars. Michigan has not been as seriously damaged as reported, neither has Maryland, Virginia, New Jersey, nor Delaware.

The tree-fruit crop of California is estimated at 75%, and is from ten days to two weeks earlier than last year. There has been a brisk demand for early cherries and early apricots, but within the last week there has been a noticeable falling off of orders and even the auction markets do not appear as active as we would like to see them at this time of the year.

At the present writing from 150 to 200 carloads of cantaloupes are being shipped from this State daily, and it is authoritatively stated that over 200,000 carloads of bananas will be sold in the United States during the

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season of 1914, and there are between 9,000 and 10,000 carloads of oranges in California which will move East during the summer months, as against 2,000 at this date last year. There is a large supply of Northwestern apples in storage throughout the country, and this supply is not moving even at moderate prices. The second crop of strawberries from the Southern States, together with watermelons from Georgia and Carolina and a heavy shipment of pineapples from Florida and Cuba, are flooding the Eastern auction markets, where they are purchased by brokers and wholesalers and distributed into the smaller markets, and, we are advised, at a very low figure.

Furthermore, the financial situation in the country is very unsettled. There is considerable money, but it is in the hands of a few, and skeptical financiers seem to be over-cautious. Whether this is due to the Mexican situation or with a view to discredit the present administration, is not known, but, in any event, this unstable condition of affairs, together with the heavy movement of competitive fruits, indicates that prices for California fruits will be no better than normal. It seems to be in the air that competition will be keen and that we will have to use every energy possible to secure orders for private sale markets, and the growers should be liberal with this office regarding prices. In our judgment, it will be unwise to hold for high prices.

The early varieties of peaches are now practically out of the market. St. Johns are moving in light supply, and Crawfords will be ready for shipment in about a week.

The plum market has held up remarkably well, especially on Japanese varieties.

Bartlett pears have just begun to move from the river in small lots; but we do not look for a heavy movement of this variety until next Tuesday. Packers are offering from \$1 to \$1.10 unpacked for pears, river bank, while canners have quoted as high as \$55 per ton.

There has been little or no activity in the canning peach market during the last week, but we look for action just before the Tuscans begin to move.

Reports from the Imperial and Coachella valleys indicate that Thompson Seedless grapes will be ready for shipment within ten days. Mildew has developed, owing to the late rains, in a good many of the Tokay and Malaga districts, and, although growers have sulphured their vines religiously, considerable damage has been done in several districts.

The markets for the past week ranged as follows:

Chicago—Royal Apricots 85c@1.78; Clyman, \$1.53@1.63; Royal Annes, 67c @1.32; Alexander peaches, \$1.09@1.17; Biggerrean, \$1.59@1.95; Bings, \$1.59@2.25; Tartarian, \$1.19@1.38; Triumphs, \$1.34@1.48; Black Oregon, 85c @1.21; Republican, \$1.45@1.77; Climax, \$1.88@2.14; Tragedy, \$2.11@2.57. New York—Royal apricots, 92c@ \$2.62; Clyman plums, \$1.17@1.65; Royal Annes, 85c@1.67; Red June, \$1.10; Alexander, 77c@1.35; Bings, \$1.85; Tartarians, \$1.10@1.40; Republican, \$1.50; Climax, \$1.80; Formosa, \$1.40@2.87; Tragedy, \$2@2.90; Burbank, \$1.14 @1.20.

Deciduous fruit shipments to the East, June 16, were: Cherries, 2½ cars; apricots, 9½; peaches, 8¾; and plums, 32¼ cars, a total of 53 cars; making the total to date 956 cars as against 450 cars at the same period last year.

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PUBLISHER'S DEPARTMENT.

The PACIFIC RURAL PRESS tries to be "on time" in every department, and usually succeeds; but this week we shall have to ask indulgence of those who have sent in book orders, as, besides being vacation time, the number of orders reaching this office has been unprecedented, causing us to run a few days behind in the book department. We shall, however, make an effort to have every book ordered reach our patrons and readers about the same time this issue comes into their hands.

The above condition of affairs is due, in part, to the issue this month of the seventh edition of Professor Wickson's popular work, "California Fruits and How to Grow Them." Many of our readers have a copy of previous editions, but nevertheless the demand for this book seems undiminished, and is now, and has been for some time, regarded as a text-book on fruit-growing, not only in California, but in many foreign countries where similar climatic conditions prevail.

Another popular work from the pen of the same author is "One Thousand Questions in California Agriculture Answered." A large number of these books are now in the hands of intelligent farmers and we have many orders now on hand to go forward this week, while the letters received commending its usefulness are extremely gratifying.

Several of our field men succumbed to the vacation fever this week, just when we had figured on adding 300 or more new names to our subscription list. However, those that worked enabled us to put the names of 231 good, intelligent farmers on the mailing list.

A handbook of forestry, for the farmer and the agricultural student, has just reached this office from the Macmillan Company, 66 Fifth avenue, New York. The authors, E. G. Cheyney and J. P. Wentling, have endeavored to furnish an aid to the farmer in the establishment, care, and utilization of small patches of timber, which may be maintained in connection with the farm. While the book is written for Eastern conditions, there is much valuable information in the 340 pages for Western farmers. The book is nicely illustrated, bound in cloth, and sells for \$1.50.

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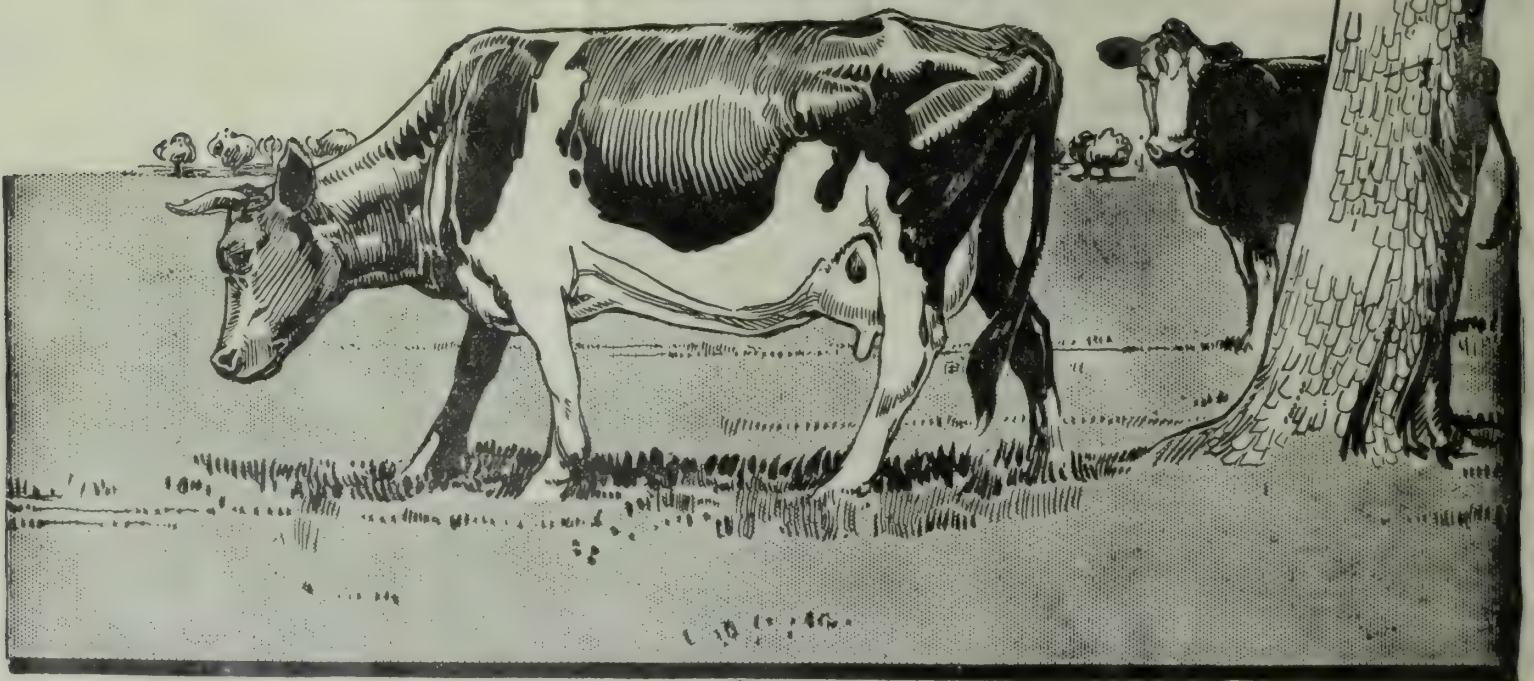
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PACIFIC RURAL PRESS

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THE PACIFIC RURAL PRESS

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SAN FRANCISCO, SATURDAY, JUNE 27, 1914.

Forty-Fifth Year.

Save Forests for Moisture.

[Written for the PACIFIC RURAL PRESS by G. H. RHODES, Secretary
California Forest Protective Association.]

The California farmer might say: "What are the forests to me? I am not interested in timber or brush; I am growing fruit, grain, stock, or alfalfa—not trees. Why should I think about the preservation of the forests or the protection of brush from fire? What difference will it make to me if the timber is all cut off or all the brush in the mountains burned? How would it help me to have forests growing to take the place of those that are being used? The

of their payrolls to many different communities. This furnishes a good market for a great amount and wide variety of farm products.

In 1909 the value of forest products exceeded the value of all the orchard fruits, tropical fruits, and nuts produced in the State, was equal to the value of the hay and forage products, and nearly equal in value to all the other products, including cereals, seeds, hops, potatoes, and vegetables. This gives some idea of the farmers' interest in the forests that produce lumber and other things; but he is also interested in the brush and cover growth on the watersheds.

Forests Save Moisture.—Without moisture he could grow nothing. This he gets from two sources—natural and artificial. Rainfall is



Redwoods in Muir Woods, Near Mt. Tamalpais.



An Opening in a Sierra Pine Forest.

brush on the hillsides is worth nothing, and it is better to keep it burned off."

Especially is the farmer in one of the counties where there are no forests apt to take this view. He forgets, however, many important things for which he depends on the forests. He depends on them for lumber, fencing material, shakes, grape stakes, hop poles, shingles, silo material, boxes, and many other things.

Over 80 per cent of the lumber sawed in California each year is used within the State, and an equal amount is brought in from Oregon and Washington. Competition by lumber products at home keeps down the prices of that brought in. If no lumber were produced in California, the farmers and others would pay much more for that which they need, sending millions of dollars out of the State every year.

Farm Markets at Sawmills.—According to the census of 1910, there were 544 sawmills in the State, employing 25,000 men and paying millions of dollars in wages. These sawmills are scattered throughout the timbered sections of the State, bringing the benefits

the natural source, and irrigation the artificial source. The cover on the watersheds affects both very materially. It has been shown that a hillside on which there is a cover growth retains at least five times as much of the moisture that falls on it as a barren hillside. This has two important results—the prevention of floods in winter and drouth in summer. Not only this, but floods from barren hillsides would carry an immense amount of rock and coarse soil down the streams, filling up the watercourses and covering up the productive soil, as well as flooding the lowlands.

The cover growth forms a vast storage reservoir which retains the moisture of the wet season for distribution in the dry season, and can never be replaced by any work of man.

In California today there are approximately 11,000,000 acres of cultivated farms. There are about 22,000,000 acres of brush and small timber on the watersheds, which, with the forests of timber, conserve and distribute the moisture which makes possible profitable

(Continued on Page 720)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p. m., June 23, 1914.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Max. Past Week.	Min. Past Week.
Eureka.....	.13	36.55	45.96	62	48
Red Bluff.....	.00	33.33	24.93	108	60
Sacramento..	.02	20.10	20.09	94	52
S. Francisco..	T	29.46	22.27	68	50
San Jose.....	.12	19.30	16.79	80	48
Fresno.....	.08	11.07	9.68	102	54
Independence..	.00	12.01	9.53	90	50
San L. Obispo..	.00	31.20	20.51	72	44
Los Angeles..	T	23.65	15.64	74	54
San Diego.....	T	9.82	10.01	70	58

T means trace.

The Week.

Merely as a formality incident to the occasion, we note the fact that this issue closes the current volume of our journal. It is customary to mention the fact lest readers, lulled into a sense of security by the regularity and ease with which the issues appear, might not note the culmination of a journalistic epoch, so to speak. To arouse the reader, therefore, an index of the last six months' work is placed on the last page of this issue, where we hope it will attract attention by being less handsome than the expensively illustrated advertisements which usually occupy that space. The index of this volume is made by collaboration of our assistant editors, and for style and contents it stands alone in the English language. It is perfectly safe to say that there was never anything like it before nor will there ever be again. It is evidently the "last word" on the subject, which, obviously, an index ought to be.

It is a customary formality also, at the close of a volume to call the readers' attention to the remarkable quality and prosperity of the publication and its distinguished public services. The reader will therefore oblige us by considering himself called. As to the phenomenal prosperity and push of the journal, we can cite nothing more conclusive than the health bulletins which are found each week in the "Publisher's Department" on the next to the last page. In view of the notable increase in our circulation, we count it very fortunate that the United States Census last week cred-

ited California with a population of 2,757,895—a gain of 380,346 since 1910. This helps a little, of course, but the percentage of increase in our circulation is so much greater than the percentage of increase in population, that we must exhort all agencies employed in increasing population to greater activity. We do not wish some evolutionary journalistic historian of the future to write of us: "After 1915 the growth of this unique organism was checked by limitations in its environment."

The State at Large.

Certainly things have been doing in and for the State during the last week which are somewhat memorable. Lassen's Butte has thrown out a hot rock of over a ton's weight and proven up title to be a volcano. At the other end of the State the Colorado river has poured a flood into the lower part of the Imperial valley, but could not prevent the putting up of a 535-lb. bale of cotton on June 17—three days earlier than a bale was ever made before in the United States, and 3% more lint in the bale! More centrally in the State there have been storms which are rare in June, and though there was a wash-out in a waste place which held up trains for a while, injury to crops has been restricted in area and some summer field crops have been advantaged.

A matter of much moment in our export trade is the clearance of the track of our characteristically pure wine product from bogus wines made at the East. The Secretary of Agriculture has prohibited the use of the name "wine" on products made by the addition of water to the juice, pomace or pulp of grapes, and defined wine to be "the product of the normal, alcoholic fermentation of the juice of the fresh, sound, ripe grapes with the usual cellar treatment." The new decision provided that where any water is added it is not permissible to label the product otherwise than as "imitation wine." This will affect all wines made after June 12, 1914.

And Californians are winning personal distinction also. At the meeting last week in Vancouver, B. C., John Vallance, of Oakland, was elected president of the Pacific Coast Association of Nurserymen, and San Francisco probably will be the scene of the next convention. Of the new executive committee, all are California men, and a great assembly during the Panama-Pacific is thus assured.

Forests and Forest Fires.

The interesting plea for our forests and our forest industries, to which we give leading place in this issue, will not only appeal to those whom pressure of farm work will keep at home as well as to those who are fortunate enough to spend part of the summer in the company of our grand old mountain trees. To the latter we hope it will particularly suggest the imperative need of protecting our forests from their ancestral enemy, fire. Because the lightning starts conflagrations in the forests and because old Mt. Lassen insists on belching fire upon a dry forest floor instead of upon a snow-cover, is no reason why our tourists and campers should play Prometheus on the forested mountains and plateaux. It should be remembered that leaving fires in what seem to be waste places where there are no grand trees, threatens greater danger perhaps than leaving fires in real forests. An exchange very properly points out that though there were over

2000 fires in California during 1913, but very little merchantable timber was destroyed. This is protected by the federal forest service and the owners. The greatest loss fell on farms, stock ranges, cities, irrigation districts, and others who depend on the water sheds which were burned over. These apparently waste places are generally adjacent to farms. One of the worst so-called "forest fires" in California last year was in Napa valley. It started in the cover growth in the hills and spread across the valley, burning fields, vineyards, orchards, fences, houses, and other property worth tens of thousands of dollars. Anyone who will leave a camping place before making absolutely sure that his fire is extinguished, unwittingly perhaps, but none the less surely, declares himself an enemy of his fellow men.

The Farm Hands' Leisure Hours!

There might be a touching poem written on this subject, but our readers will not let us try it. Judging by what one of them writes us, they are not in a mood for sentimental verse. He writes: "I had not thought before of the danger of having a lot of idle hands on the farm two-thirds of the time, which you suggest in your editorial about 'Satan and Idle Hands' in your issue of June 13. I can see now what it would mean to have a lot of hands with eight hours for work, eight hours for sleep and eight hours for deviltry. I would rather be in hell right away than to have hell on the installment plan all the rest of my life. I see where I get my family to town the day after election, if that pesky amendment passes. Is that the way it looks to you?"

Cool down, friend: your language is almost unfit for the columns of an exemplary family journal: if you generate any more heat you will begin to swear, and then your letters will go plump into the waste basket. Suppose you think, whether after all you could not plan out something to keep those poor idle men, whom the law would make loafers, from becoming such a burden and danger as you anticipate. Haven't you a buzz-saw or a barley grinder which you could rig over into a moving-picture machine? As you would not be under town censorship you might use films a little more piquant than could be seen in the village and could hold your audience out of present mischief, even if you did make train robbers of the whole bunch later. Again, if your ranch is on the river, you could put up some benches and a score-board, furnish plenty of tobacco and set the hands to bobbing for eels and catfish for a nickel ante. This would occupy the late afternoons, until you started the motor on the picture machine. Besides, there might be some business in it, for the catfish, if properly scattered, would cut down your fertilizer bill. Of course, away from the rivers or reservoirs, some drier form of recreation would be required. Think what a joy it would add to rural life if match games of football or baseball should begin promptly at four o'clock over the whole country side, between teams from different rival ranches. They would be great things to bet on. Such contests would also have an advantage over the fishing-game because the men will really need exercise to keep them down to regular-sizes of overalls. Outside-sizes cost more money and would increase the over-leg expenses of the ranch in a way not to be tolerated by farm-economists. But of course we cannot be expected to develop a working-

scheme of this kind in a paragraph. We only wish to suggest that the issue you raise is not hopeless of solution. Keep cool and you can solve it all right on some broad, humanitarian line.

What to Do with Prison Labor.

It is currently announced that the jute mill at the State's prison is to be cleared out after about a third of a century's effort to make it go right. Prison bag-making was entered upon when Senator Perkins began his administration of governor of California for the purpose of relieving grain growers from the exactions of bag-rings, but it never seemed to do all that was expected of it, for one reason or another. Using prisoners for making things in competition with free labor outside has been generally abandoned as undesirable. The present constitution of California provides: "After the first day of January, 1882, the labor of convicts shall not be let out by contract * * * and the legislature shall, by law, provide for the working of convicts for the benefit of the State." This it was endeavored to do by the introduction of bag-making, which is now to be abandoned, and "benefit of the State" must be sought in some other way. Naturally the building of roads, which is now calling for much taxation, suggests itself, and the work of Thomas Tynan, warden of the Colorado State's prison, will doubtless be looked into by our prison directors. Mr. Tynan's report shows that he has been building good roads at a cost of \$298.12 per mile and "from December 1, 1912, to 1914, the prisoners of the institution with our six road camps will give to the tax-payers of Colorado \$500,000 in road work, or about \$250,000 a year, and, besides, our buildings and improvements at the prison will amount to over \$100,000." Mr. Tynan is also using convicts for farm work and maintaining the men at a cost of 32 cents per day. He gives this summary: "During the past five years we have had over twenty-two hundred individual men working in our honor camps, and on our ranches. These men without guards—some fifty and one hundred, and even three hundred miles away from the prison—have created a national reputation for loyalty. Only a little over one in every one hundred men have made a successful escape, which is far less than desertions from the United States army or navy, and communities have come to feel as safe near our prison road camps as they would were the road builders representatives of free labor, instead of prisoners of the penitentiary."

Certainly, this statement is very suggestive. If to save crops and make proper use of good weather, it should become necessary to work men in short shifts, Mr. Tynan's system of maintenance and movement of help might become very necessary. This suggestion should not give offense, for is it any worse for a farmer to get help under an honor system for reclaiming criminals than for others to induce criminality among farmers by passing a law which makes it impossible for them to conduct their business successfully?

Queries and Replies.

Querists must submit full names and addresses.

Dodder and What to Do for It.

To the Editor: Two of my nearest neighbors have just planted alfalfa this spring, across the

road from me, and their fields are thick with dodder. Will this spread to mine, and, if so, how can I kill it out? What can be done with a field which is covered with dodder and also has a fine stand of alfalfa seeded this spring? Can anything be done to an agent selling alfalfa seed with dodder mixed in it.—Reader, Glenn.

Dodder can be controlled by burning, if it only occurs here and there, or by cutting or pasturing down the alfalfa closely when dodder is all over the field. Dodder is an annual and must start each year from seed which germinates in the ground and subsequently attaches itself to the alfalfa stems and sucks their sap for its later life. Therefore, if you can keep the dodder from blooming and seeding you can keep it down, but if you run the alfalfa for hay in the ordinary way of mowing, the dodder has plenty of time to make seed and become more abundant. It does not spread from field to field in any mysterious way, by the wind, etc. Never allow animals to pasture clean alfalfa after grazing doddered fields. You probably cannot do anything with a man who sold you doddered seed, unless he guaranteed it pure. If he did, you can sue him for damages on his guarantee. Alfalfa seed should always be tested by reference to the Experiment Station before sowing. A man who will cut a doddered alfalfa field for seed ought to be Villa-fied.

Probably White Fly.

To the Editor: For the past two years there has been an insect that has attacked my beans (both pole and bush). It seems to be a tiny fly—about one-half the size of a mustard seed—perfectly white like flour. It attacks the under side of the leaf, and the leaves turn yellow in spots and finally fall over, and then fall as the insects draw the juices from them. Whenever you touch the vines they rise up almost like smoke and then settle back on the vines again. Can you tell me what to do to get rid of this pest?—Reader, Pope Valley.

Why did you not put a few in your letter, so we could see just what you have? We guess that you have the "white fly" (aleygrodes), which is often very pestiferous on garden plants in the way you describe. They can be killed with kerosene emulsion, properly made, without injury to plants. You need a good pump and nozzle to make a spray-cloud to dislodge them from the under sides of the leaves and entangle them in air also.

Apricots at Elevations.

To the Editor: I have an apricot tree which has borne good crops every year for the last four years. My elevation is about 2000 feet. Would you advise me to plant apricots, and, if so, what varieties?—Reader, Tollhouse, Fresno county.

The behavior of your trees shows that the fruit is safe with you. We cannot prescribe varieties for your elevation, which is a little above the usual commercial range of the apricot. Manifestly the one which you now have is the proper one to plant and you can proceed safely by grafting or budding from this tree upon apricot or peach seedlings, whichever are available. This would be vastly better than planting untried varieties. Low winter temperatures do not injure the apricot, because the tree grows successfully even in some parts of the Eastern States. The danger lies in the spring frosts after the tree has become active. It is a question how far your apricot growing would be profitable in competition with the

crops grown nearer to transportation on the valley and lower foothill lands. So far as there may be local demand for the fruit, however, the advantage would be with you. We should doubt the desirability of large planting except as local sale may be profitable.

Sulphuring Fruit for Drying.

To the Editor: Please inform me if there has been any change in the law this year relative to the sulphuring of peaches.—J. P. L., San Martin.

So far as we know, there has been no change in the sulphuring law relative to the drying of peaches and other fruits. We have heard indirectly that the referee board has reached some sort of a decision. We do not believe that they will promulgate any ruling until after the present year's product has been disposed of. There has been an understanding all along that any change should be made preferably about the first of January, if it is to be made at all. We believe this matter is fully understood by the referee board.

Tomato Wilt?

To the Editor: Will you tell me what causes a tomato vine to die at the root, thereby causing the vine to turn yellow and die. My vines did so last year, and they were full of tomatoes at the time.—Grower, Sanger.

They may go that way if the alkali rises on them as the season advances. Usually, however, it is a "wilt-disease" caused by bacteria which invade the plant from the soil. Plants which go that way should be burned, root and all. There is no satisfactory treatment. Rotate your garden crops or move your whole garden patch onto new ground, if you can. Several vegetables do not do well succeeding themselves on the same ground. The land "gets sick" for them—which means full of their minute enemies.

Hogging-Off Emmer.

To the Editor: I have about two acres in emmer. I do not think it will make good hay on account of the strong beards it has. Would it be advisable to build a fence around it and turn the hogs in and let them thresh it out, or what would be the best way to feed it to hogs?—F. G., Calistoga.

Yes; it would probably be the best use you could make of it. As a feed grain for all kinds of animals, emmer is much inferior to barley, corn and sorghum. It can, however, be profitably mixed with them and much better results attained than by feeding it alone. It also works well fed with alfalfa. Emmer is hardy and productive under drouth—and that is about the best that can be said of it.

Thinning Peach Growth.

To the Editor: If five-year old peach trees make a dense growth of wood would it be advisable to thin this growth to keep it from smothering the fruit buds for the following year. If so, at what time should this thinning be done?—H. J. K., Reedley.

It is sometimes desirable to thin as you propose, not because it smothers fruit buds, but because it may make interior shoots stronger and more likely to bear good fruit. It should be done as soon as you decide the growth is becoming too dense. Such summer pruning is seldom necessary or desirable on trees which have been properly winter-pruned.

Apricots in the Bay Valley of California.

[By J. C. SHINN of Niles at the Fruit Growers' Convention at the University Farm.]

We are gradually learning in California to grow in each section the one or more kinds of fruit that are best there; if possible kinds that are better there than they can be grown anywhere else. The apricot is the one kind of fruit that is being most planted in the section where I live, in the bay valley of southern Alameda county. I do not wish to offend any grower from some other section by suggesting that we grow the best apricot there is. There are a good many kinds of best and if there are other sections, as there are, that are planting heavily of apricots theirs must also have some quality in which they are best, but in the points for which the apricots of the central coast valleys are sought there can be no better I am sure. These qualities are large size and rich flavor with firm well colored pulp, so that they may ripen on the tree and still be shipped to the canning factories. They give very small shrinkage in drying and make large dried fruit of the highest quality and appearance.

REQUIREMENTS.—To attain these high standards in quality one must have a rich deep loam soil, and as the apricot is an early bloomer the orchard must be located in a spot that is practically free from frost. Some parts of the orchard on this place near Niles have been free from frost for twenty or thirty years while other spots, low sags, have been more or less injured every few years. Other parts have been hurt only in such years as 1898 when there was so much damage throughout the State. In good locations the apricot will give an immense tonnage of fruit and so, as I said, the soil must be deep, as it is in favorable locations throughout California, and I should say never plant on soil less than 10 feet deep for I have seen the roots of apricot trees fully double that deep in the soil.

This deep soil is of little value to the tree if it is not kept moist, for the roots can get nothing out of it in the way of nourishment when it gets very dry as it was during the two years just past in many orchards. In old orchards where the roots fully possess the soil for many feet down and the tree tops are big and there is a heavy draft on the soil for moisture and nourishment the water is soon pumped out in dry years, and I have found that the ability to put water on your trees at any time you judge they need it, that is to have a sufficient and reliable irrigation plant, is one of the very best investments an orchardist can make, and in a properly located orchard will go far toward insuring regular and abundant crops of fine quality.

IRRIGATION.—I would flood the land of bearing orchards in the winter unless rains are very abundant, then I would irrigate in deep furrows or in blocks in May and again in the early fall soon after the fruit is gathered. The summer irrigation may tend to draw the roots to the surface but the winter watering will go down deep in the soil and enable roots to reach greater depths than would have been possible under natural conditions.

VARIETIES.—Having got our soil and location and plant for irrigation the

next thing is varieties. A number of years ago when I was in the nursery business with my father, the late James Shinn, we thought at first that out of many kinds we had tested there were six that we could thoroughly recommend for market planting. They were the Peach apricot, chiefly grown then in the Sacramento valley, the large and small Hemskirke, Moorpark, Royal, and Blenheim, or as we then called it, the Shipley. Now I would cut the recommendation down to the one variety last named—the Blenheim. The first three named are certainly grand apricots of the Moorpark type which gives us the immense size and rich musky flavor in which no other class can equal them, but they are too irregular in bearing and they often ripen in an irregular way, that is one end or one side will be ripe, and soft indeed, while the other end is still too green for proper working in canning or drying. They seem also to be somewhat more subject to skin injury from fungus or climatic adversities, and furthermore they ripen too late (on young trees especially) in certain years for the clean-up picking about August 31. This causes them to lap over into the season of other important fruits that the canner must handle. Still under favorable conditions these apricots are truly as near perfection as we are likely to get and ripen evenly with a rich firm golden yellow flesh that will be thoroughly ripe and sweet long before it begins to soften, and in a few locations they have borne very heavy crops with great regularity for a number of years. I have a theory that if one could find just the right soil and climate for the apricots of this type they would be the most profitable still, and some of my own experiences seem to prove this, for I have had trees that were in an especially favorable situation that bore heavy crops for a number of years in succession and then became irregular in bearing when the conditions of their growing became a little less favorable.

The general conclusion of planters on this subject is shown by the fact that almost no apricots of this type are being planted and indeed in my own locality many of them have been dug up or top grafted to Blenheim, while practically all the new orchards are of that variety. Most of the older orchards of the Santa Clara valley are of the Moorpark class or type and this causes a good deal of the irregularity in the supply of dried and fresh apricots so that it has become a saying in the trade that we never have two good crops in succession.

There are two chances of the loss of crop from these varieties. The first is just before the swelling of the blossom buds in the spring, when, owing to some lack of favorable conditions during the year past, many of the blossom buds themselves will drop off. That is, many of them, sometimes most of them, will drop off the tree without opening. There may be a good many of those on the newer wood that will develop so the practice has grown of leaving the trees untrimmed so that the first of the growth of the year before may give a late or second bloom that will make a partial crop, but it is a poor dependence.

The Blenheim seems to be a little larger than the old Royal which is the

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PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

type of this class or section of the apricot. It is flatter in form and I think has a little smoother skin. Neither of them will come up to the sizes demanded by canners with a good deal of care in all details to give them the most favorable conditions of growth and development. The sizes in demand are ten and twelve to the pound and larger and while it is easy enough to get Moorpark to ten to the pound or even six, these other kinds will give you too large a proportion of fruit that is smaller than that, on old trees with a heavy crop if anything is neglected throughout the year. Moreover there are certain years when conditions are unfavorable; too cold and cloudy when the young fruit should be growing along, or too hot and dry when it should take its last swell just before it ripens and in either case it will be under sized in spite of all you may do and in the case of the hot spell it will ripen up soft and mushy.

If, however, we have normal weather conditions such as we expect and generally get in the coast valleys, with mild bright days and cool nights with high fog sometimes, your fruit will grow and swell to large size and ripen slowly with the firm high colored flesh that the canners are able to preserve in perfect condition with the minimum of "pie fruit" and the drier can cure with a shrinkage sometimes much below 5 to 1. Indeed I have known Moorpark to run as low as $4\frac{1}{2}$ but Blenheim and Royal apricots average about five to one.

CARE OF THE TREE.—As to roots, I would use peach on open well drained land, but if you plant on heavy land use good myrobalan. My experience with apricot root is that it is very brittle and tender and that gophers are very fond of it.

Prune your yearling trees low at time of planting and the next year leave a pretty good length on the limbs selected for the main branches but cut the new wood shorter and shorter each year until on big trees you are cutting off most of the new growth. Thin out the branches so that every part of the tree will get plenty of sun and leave open places where a ladder may be set in to thin and gather fruit without breaking spurs and knocking down fruit.

In thinning consider which spurs are strongest and most able to bear a heavy crop and thin accordingly. A spur that is stout and not too long and grows from a branch that is stout and healthy can grow fruit almost touching and yet bring them up to size especially if other spurs or branches near by have little fruit, but a long weak spur on a weak branch must be severely thinned out. If one side of the tree has been injured by rain or otherwise so that there is no fruit on it you can leave that on the other side somewhat thicker and still get size. In thinning your fruit take off the apricots that are small or defective and leave the good ones and remember that an early start and hence an early ending of the thinning helps much in the sizing of the fruit.

TROUBLES OF THE APRICOT.—There are several very serious diseases of the apricot and, while it is possible to control them fairly well, they cause a heavy expense each year. One of the worst of these is the scale bug, the black and brown (or Lecaniums as they are called). They become very plentiful sometimes and sap the tree's vitality to a noticeable extent. They exude a sticky honey dew on leaves

and fruit in which a black fungus, commonly called smut, spreads rapidly and I have seen orchards so bad with scale and smut that the pickers would look like coal heavers who had been shoveling dusty soft coal, and the fruit was almost useless for any purpose. Farmers get much advice first and last and we are often advised by the constituted authorities to let the natural or planted, enemies of the scale kill it off. They will do this to some extent, and such a patch as the one described will probably be much better the next year and may be practically free from scale, but some other part of the orchard will be bad and sooner or later it gets back again all over. The only safe way I have found is to spray with distillate or perhaps better, crude oil emulsion each year in the spring, and while this will never exterminate the scale it will reduce it to the minimum and the injury to trees and fruit will be very slight.

I do not state it as a proved fact, but it seems to me from several years experience with these sprays, that they assist in holding in check one of the worst diseases the apricot grower has to contend with i. e. the brown rot. I have made a great many elaborate experiments with recommended cures for this troublesome fungus by the use of fungicides in winter and spring and on the ripening fruit, but the results were absolutely negative, while since I have used the above emulsions I have at least escaped any serious injury to either the little setting fruitlets or to the mature and ripening fruit and as a consequence I have had more than average crops for several years.

This brown rot as well as what I am told are other rots often attack the little fruit especially in dense clusters just as it is or should be casting off the calyx of the blossom. If we have a moist warm rainy or cloudy period at this critical time the casting off of the ring of the calyx is too slow it seems; and rot develops often to such an extent as to materially reduce the crop. Sometimes it is just about enough to thin out the bunches and actually save work later. However, the disease seems more likely after a spring attack to develop in the ripening fruit, with sometimes very serious results and causing a loss of from 10 up to 50% in very bad years. The only way to guard against this injury to mature fruit that I know of is to pick as closely as you can each time over the trees and rush it off without the slightest delay to canner or drier as the case may be. A prompt destruction of fruit that shows the spores of the fungus and the burning of the mummified fruit, if any, in the trees at time of pruning I have always insisted on and probably with some benefit.

Shot-hole fungus is not often very serious, but can be controlled by the recommended fungicides.

Borers are a very serious pest where they get started and the cutting, if done carelessly, often causes much injury to trees. A preparation of asphalt that might be handled without the difficulty of the ordinary commercial brands would go far toward eradicating this serious menace to our orchards.

There is another fungus disease we call the die back. It will suddenly attack a seemingly healthy tree and in a week or two a whole limb or possibly most of the top will wilt and

die. Severe cutting below the injured fiber in the limb is the only remedy I know but I tried a preventive that seemed to work. I had observed that the peach trees did not ever have that disease so concluded to get as much peach food as possible in my apricot trees. I took good yearling peach trees and planted them early in the winter so that they rooted early and then in February grafted the stems about two feet from the ground into apricot. They took well and in a few years made fine trees that have been practically immune to the attacks of the disease.

THE ALAMEDA-SANTA CLARA PRODUCT.—I figure that up toward half the apricot trees in the State are within thirty miles of Niles, and from what I can learn the planting is much heavier in this central coast region than any where else in the State, and practically all of these apricots are for canning and drying. So far there is every prospect of a good market in the fu-

ture for an increasing tonnage of this grand fruit. I suppose it is entirely within the possibilities that we shall produce more apricots than we can sell for a good price, this so-called overproduction has come in many lines of fruit growing in California but at present it seems far off for apricots, and very high priced land is being planted to these trees. A friend of mine has just planted land that sells readily at \$1,000 per acre and must figure that he can make interest on that value and his added expense of growing the trees along to bearing age. I think that this is doubtless a blunder from a financial point of view, but he may be right and I may be wrong, but at any rate land that is well situated and of the best quality as his land is will pay good interest on a big valuation when it comes into bearing if planted to Blenheim apricots and well cared for. And it will pay it regularly without much possibility of total failure in any year.

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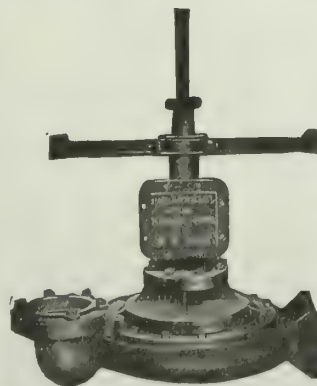
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What Does "Fruit Setting" Mean?

To the Editor: I recently suggested, through the columns of the *RURAL PRESS*, that it might be well to have an official or scientific investigation looking into the reasons for the failure of the prune crop generally throughout the State during the last few years.

I noticed that this idea is embodied in the resolutions adopted at the Fruit Growers' Convention held at Davis last week. The preamble to this particular resolution reads as follows:

"Whereas, the principal factor which determines the size of the deciduous fruit crop of California is the setting and the subsequent dropping of fruit."

This is the point to which I wish to call your attention, and that of the committee on resolutions, of which G. Harold Powell was chairman:

According to my understanding of the matter, if fruit "sets" it will continue to grow and mature, barring accident, of course, or a severe freeze.

Darwin alludes to this term in the following sentence: "Flowers legitimately fertilized, set seeds under conditions which cause the almost complete failure of illegitimately fertilized flowers." The dictionaries also refer to the use of the word "set," pomologically, as meaning "to form after fertilization for development, as fruit or seed."

What I am trying to impress is that fruit has not been fertilized, or it would set; and not as is generally stated, and also in the resolutions above referred to, that the dropping is "subsequent" to the setting of the fruit, amongst all old gardeners and horticulturists that I know anything about, always refers to the hardening of the shell of the fruit proper, which is simply outward evidence that the germ has been fertilized.

This is an important point, because it would reduce the matter of investigation to the endeavor to ascertain why the fruit blossoms are not properly fertilized. LEONARD COATES.

[We judge it is not settled quite as simply as that, because we sometimes have fruits maturing pulp without a pollinated kernel. The Mission olive is often that way, and so are seedless fruits, notably the Naval orange, the Thompson and Sultan grapes, etc. On the other hand, the May or June drop takes off many fruits which have good kernels and are therefore pollinated. There is a good deal more in it than the pollination or fertilization of the germ. As for "setting," we take it to mean that the little fruit became sizeable enough to see and did not drop with the calyx. "Setting is apparently a term of degrees, and the modification "well set," which may mean that the fruit is on for the season, is also in use. We take it the committee has to cover the whole subject and find out why we do not have more fruit to sell, rather than limit itself by definitions. —EDITOR.]

ALL-SUMMER POTATO PLANTS.

[Written for the *PACIFIC RURAL PRESS*.]

"I had all the potatoes my little family used last summer, from 25c. worth of Early Rose seed planted in February," says J. M. Rasmusson, of Willows.

The ground near his house was well spaded first. It is dobe a foot deep on top of yellowish silty loam. The plants were cultivated with a spading fork,

throwing alternate spadefuls from the centre to the rows on each side. This would leave a ditch for irrigation down the centre. Alternate cultivation and irrigation were kept up all summer.

Beginning May 15, he would dig out a bucketful of potatoes, whenever they were needed, using his fingers in the soft soil and leaving the plants undisturbed. They kept on setting new potatoes all summer, though the later ones set too thick and didn't get bigger than eggs and some were covered with the small secondary tubers.

For those with limited garden space this would seem an economy of space and seed; one way of getting the most from the land.

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FOR SALE—Peach, apricot, plum, prune, fig, apple, pear, and other fruit trees; walnut, almond and pecan nut trees; orange, lemon, grape fruit and olive trees; grape vines, berry plants, elms, maple, Balm of Gilead, umbrella and other shade trees; palms, roses, ornamental trees and shrubs. Write for special prices. FRANK & KOHMAN, Nurserymen, Box 1212, Fresno, Cal.

BURBANK'S SPINELESS CACTUS. We are offering for immediate delivery the improved forage and fruiting varieties Burbank cactus. We guarantee all plants true to name. A liberal discount on orders for 1000 leaves. Send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or Jesse I. Jewell, Mgr., Santa Rosa, Cal.

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Thornless Cactus Slabs for sale at 5c to 15c each. Few Santa Rosas at 25c. C. R. Hanna, Route 3, Riverside, Cal.

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Rural boys and agents, with good references, to sell Gopherine; it gets the gopher's goat. No money required; a fast selling guaranteed article. One agent made \$12.00 in ten hours. For particulars, write Edward G. Johnson, Scientific Horticulturist, 56 Pryce St., Santa Cruz, Cal.

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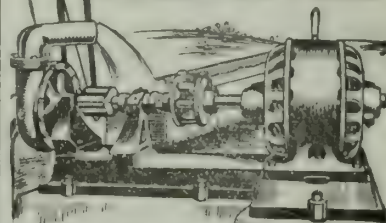
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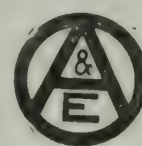
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526 California St., San Francisco.

For the half year ending June 30, 1914, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Wednesday, July 1, 1914. Dividends not called for are added to the deposit account and earn dividends from July 1, 1914.

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Pruned and Unpruned Prunes.

To the Editor: While in Napa valley the other day I was shown one prune tree in a twenty-acre prune orchard that had been pruned heavier than all the rest. The leaves on this tree were of a dark green color, while the leaves on the others bordered somewhat on the yellow. There was no difference in the amount of fruit on the trees; they all had about ten per cent of a crop. Will you please state what effect, if any, this difference in color will have on the fruiting of the tree next year. The owner took the stand in favor of non-pruning in the controversy in your paper last fall.—C. QUEEN, Fish Rock.

[The pruned tree naturally showed better foliage because of the advantage of the root over the top: the tree had greater "vegetative vigor." We do not feel safe in prophesying, as you request, because the unpruned trees have a small crop and plenty of moisture. They are likely to make large prunes this year and a big crop next year. If they carried a big crop this year, one might be safe in betting on the heavier bearing of the pruned tree next year. As for the color of the unpruned trees, that is likely to improve later.—Editor.]

The bean crop for 1914 now promises to be a large one in all sections of the State, reports from Lompoc, Santa Barbara county, stating that many ranchers there who have heretofore farmed their land to other crops are this year planting beans. Estimates for the State are 1,250,000

80-lb sacks of lima beans, and an equal amount of other varieties grown. It is thought that the market for these beans will be good, as the crop of last year will soon be cleaned up.

FOR PESTS OF MAN AND BEAST.

To the Editor: If R., Oakley, will place a few pieces of apple or potato peeling in his bed the fleas will not annoy him. I have tried this many a time and found it most effective.

To prevent gnats, sand flies or mosquitos annoying or stinging, get a bottle of glycerine to which has been added enough oil of pennyroyal to give it a pungent smell, rub this over the hands, face and neck when these pests are troublesome. The glycerine prevents the oil from evaporating too rapidly.

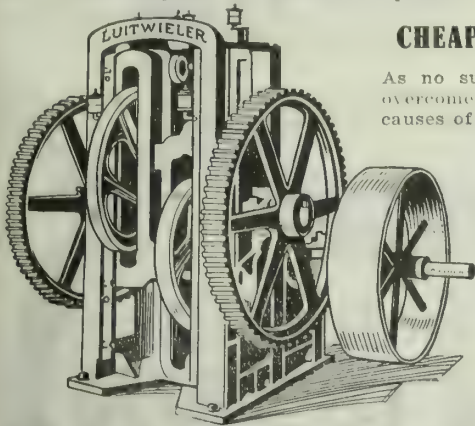
For flies on cattle or horses, use a strong infusion of walnut leaves; apply with a cloth or sprayer if you have one. I have used these and know them to be effective.

San Jose. SAMUEL HAIGH.

I. N. Cable, manager of the Sebastopol Berry Growers, states that this year's berry crop will establish a record for Sonoma county. The crop will run between 2200 and 2400 tons, as compared with 1800 tons for the highest yield heretofore. Reports from the Barlow ranch are that loganberries are only an average crop, but that the Mammoth and Lawton blacks are very heavy.

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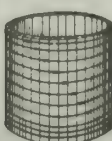
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R. F. WILSON, 447 W. Main St., Stockton, Cal.

Constructive Agriculture—No. 25.

SHEEP ON SMALL FARMS.

[Written for the PACIFIC RURAL PRESS]

Along with the general feeling that more live stock of all kinds should be grown on our increasing area of alfalfa land, one finds a growing favor for the well-bred sheep, and experimental work along this line by farmers is showing that sheep compare favorably with hogs as a by-product for the alfalfa grower who has other main lines such as dairy cattle.

Among those who have had marked success with sheep during the past two years are the Kaupke brothers, near Woodland, Yolo county, who are building up a nice flock of registered Hampshires on their father's alfalfa and dairy ranch.

That the sheep business may be entered in a small way with little capital is evident on this ranch, from the fact that but two ewes were purchased at the start, some two years ago. These were added to the next year by the purchase of 12 more ewes, and these, together with the ram, constituted the foundation for the present flock of 49 head, 36 of which are ewes, a number of rams having been sold during this time for breeding purposes at prices averaging about \$40 a head.

While sheep are not so prolific as swine, the two-year-old and over ewes which were in this flock last winter, lambed 220 per cent of lambs, of which 160 per cent were raised and are now in the flock. This is a much larger percentage than is commonly raised on

the range and is largely due to the fact that the ewes are kept in better condition, on the plentiful feed provided, and that the owner is able to give the flock more attention at lambing time than the larger grower.

Two-year-old ewes in this flock weigh from 250 to 350 pounds, this breed being of the mutton type, although they also shear from 12 to 16 pounds of fine wool a year, which usually sells a few cents above the market quotation for coarser wool. This year wool buyers are paying as high as 20 cents a pound for such wool and finding it difficult to get deliveries at that price. This is, however, an exceptionally good price, as is the case with all other grades of wool.

Yearlings in this flock weigh from 150 to 175 pounds and shear about five pounds of wool the first year. Although the wool is not considered the main source of revenue with the Hampshires, the money received from that source is considered about equal to the cost of caring for the flock.

All ewes are bred in the fall and sheared during April and September. By shearing at these times the sheep are able to stand the hot weather in the summers, after the April shearing, and have time after the September shearing to put on a good fleece before the colder weather in winter.

The cost of feed is a small factor, as they are run on waste patches of feed and in fields that are badly infested with weeds, during that part of the year when the weather is nice. In fact the only time when they are housed or fed any special feed is during rain storms, when they are put into the barn and fed alfalfa hay.

It is commonly supposed that five or six sheep can be kept on an acre of land when pastured, but it is the belief of Messrs. Kaupke that by putting the flocks in small lots and feeding cured alfalfa hay, at least twice that many could be grown to the acre.

One objection to the breeding of sheep on the lower lands, for use on range lands later, is that they are not able to stand the hardships of the range conditions. This has been overcome on this ranch by selling yearling rams, instead of older ones and seeing that they are clipped short and have their feet well trimmed. By pursuing such methods the buyers have had good success with the rams and have found that when crossed with other breeds the offspring is a very desirable animal from every viewpoint. In fact, results have been so satisfactory that a ready market has been established among the range men.

In conformation, the Hampshire is very much like the Shropshire, although said to be somewhat larger, and while they have never gained a foothold in this State, it seems very probable that more will be raised in the future, owing to the heavy demand for mutton breeds at this time.

For the money invested and the care required it is doubtful whether any other farm animal can be so profitably handled as sheep, where they are raised on alfalfa lands as a by-product, the one essential, however, which farmers should not lose sight of, is that to be successful, in its broadest term, he must keep well-bred sheep, for scrubs do not produce as much wool or meat as those seen on the above mentioned ranch.

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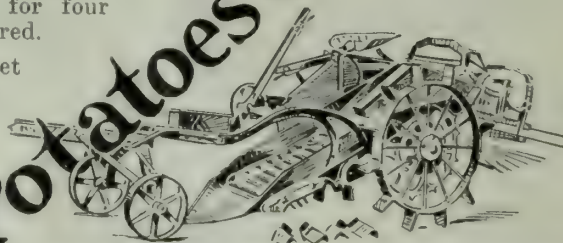
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Standard Oil Company
(CALIFORNIA)

Sulphur Fertilizer for Alfalfa.

[Written for the PACIFIC RURAL PRESS by F. C. REIMER, Experiment Station, Talent, Oregon.]

During the past three years the Southern Oregon Experiment Station has been conducting extensive fertilizer experiments on alfalfa in the Rogue River valley. These experiments have been conducted in co-operation with alfalfa growers in various sections of the valley. During this time valuable and interesting results have been obtained. It has been found that on some types of soil the yield of alfalfa can be increased from 25 to 500% by the use of either superphosphate, or gypsum. It has also been found that no increase in yield of alfalfa has been obtained on these soils by the use of potash, nitrogen, or lime, when used as fertilizers.

Since superphosphate and gypsum gave such marked increases in the yield of alfalfa, the writer decided to determine why this was true. It is well known that superphosphate is a compound of phosphorus, sulphur, calcium, oxygen and hydrogen. Oxygen and hydrogen are of no value in any fertilizer, and most of the soils in this valley are so well supplied with lime that calcium need not be added. Phosphorus is a valuable plant food, and many soils throughout the world are deficient in this element. The beneficial results from the use of superphosphate have usually been attributed by chemists to the element phosphorus. Sulphur has generally been regarded as of little value in fertilizers, by chemists.

Gypsum or land plaster contains only calcium, sulphur and oxygen.

We have noted that superphosphate and gypsum produce similar results in increasing the yield of alfalfa; gypsum contains absolutely no phosphorus, potash or nitrogen, the three chief plant foods contained in commercial fertilizers. Chemists have therefore concluded that gypsum is only of indirect value, serving a chemical function in making available in the soil supplies of plant food already present.

Since the marked increase in the yield of alfalfa here were attributed to the element phosphorus in the superphosphate the writer determined to ascertain the cheapest source of phosphorus. Hence, ground phosphate rock, which contains 33% of phosphorus was purchased and applied by itself, and also in combination with stable manure. These alfalfa plots thus treated have shown absolutely no increase in yield over the check plots receiving no ground phosphate.

These results and those obtained from the use of gypsum, indicated that the marked increases obtained from the use of superphosphate were possibly not due to the element phosphorus in the superphosphate. Since ground phosphate rock does not contain sulphur, but superphosphate and gypsum do contain this element, the writer concluded that probably these increases in the yield of alfalfa were due to the element sulphur. Experiments were therefore started to determine this point. A portion of a field was selected where the alfalfa had been giving unsatisfactory yields for years. Two plots were fertilized

with flowers of sulphur; one plot with iron sulphate; one plot with superphosphate; and two plots with ground phosphate rock. Check plots receiving no fertilizer were left alongside the fertilized plots for comparison. The plots receiving the ground phosphate rock gave no increase in yield over the unfertilized plots.

The plots receiving flowers of sulphur, iron sulphate, and superphosphate, at the rate of 300 pounds per acre, produced an increase of more than 100% over the unfertilized check plots. The stand of alfalfa on the treated plots was much thicker, taller, freer from weeds, and the plants had a much darker color than on the check plots. It will be noted from this that each of these plots received in the material applied the element sulphur. The flowers of sulphur contains nothing but the element sulphur; the iron sulphate contains only sulphur, iron, and oxygen; while the superphosphate contains sulphur, phosphorus, calcium, oxygen, and hydrogen.

These results show that the element sulphur when applied by itself, or in combination with iron, gave equally as good results as the superphosphate. It is clear from this that the element sulphur is of considerable importance as a fertilizer for alfalfa on some soils. It is very probable that the marked increases in the yield of alfalfa where gypsum has been used is due to the element sulphur which it contains. It is probable that the beneficial results obtained from the use of superphosphate are often due to the element sulphur.

These results indicate that the element sulphur is of far more importance as a fertilizer on some soils than has been supposed heretofore. The element sulphur, so far as the writer knows, has never before been used by itself as a fertilizer for alfalfa. Because most plants use so little sulphur, and as most soils contain a limited amount of this element, it has never received serious consideration as a commercial fertilizer.

Recent chemical analyses by J. W. Ames and G. E. Boltz, of the Ohio Experiment Station, and E. B. Hart and W. H. Peterson, of the Wisconsin Experiment Station, have shown, however, that alfalfa uses far more sulphur than was indicated by the earlier crude chemical analyses. The analyses of the Ohio Experiment Station show that an average crop of alfalfa from one acre contains 35 pounds of sulphur, and only 25 pounds of phosphorus. It is also known that many soils naturally contain less sulphur than phosphorus.

Our experiments are now being repeated on various types of soils to determine whether all soils in this valley respond similarly to sulphur. Experiments are also being conducted to determine the most profitable amount of sulphur to apply per acre, and the effects of continued applications of element.

In our experiments superphosphate has given the most marked increases on the poorer soils. On some of the very fertile soils its use has produced no increases in yield. On such fertile soils applications of sulphur will probably prove of little value.

The most economical form in which to purchase sulphur at the present time is crude powdered sulphur. When purchased in this form it costs less than two cents per pound.



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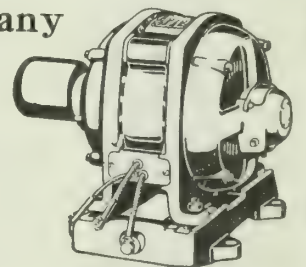
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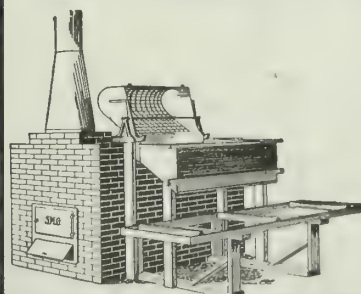
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AGRICULTURAL REVIEW.

Deciduous Fruits.

F. W. Waite, Horticultural Commissioner of Imperial county, writes that the apricot crop of that county is all harvested and that the Persian grape crop is well along in shipments. He estimates the fig crop of the county at 100% of a crop.

F. H. Babb, of San Jose, states that apricots are falling badly in some orchards in the Santa Clara valley. He estimates prunes at 30% of a full crop for that county.

The fruit and grape crops of Kings county will be fully 20% above normal, according to B. V. Sharp of Hanford.

Grapes, olives and citrus fruits are in good condition in Stanislaus county, according to Horticultural Commissioner A. L. Rutherford, of Modesto, who also states that the grain hay crop will be good in that county.

The hot weather of last week caused a heavy dropping of prunes in some orchards around Red Bluff and Vina, Tehama county, according to a representative of one of the large fruit-buying concerns.

The tentative date for the Sebastopol Gravenstein Apple Show was set as August 10 by the directors of the Association at a meeting held last week.

At the recent meeting of the Kings County Fruit Packing Co. the president and manager reported that the market outlook for peaches is not very good at this time, although other fruits appear very satisfactory.

Estimates recently made of the apple crop in Sonoma county are: Red and White Astrakhans, 40% higher than last year; Gravensteins, about the same as last year; Bellefleurs, 30% higher; Newtown Pippins, 15 to 20% higher. All other varieties to be somewhat heavier.

Army worms are said to have done considerable damage in Shasta county this year, and it is feared that the hot weather will be instrumental in promoting large amounts of red spiders on the prune and almond trees. Spraying with sulphur is recommended for the red spider.

Reports from most all of the fruit sections of the State are to the effect that the canneries are now operating in full force on early fruits.

Citrus Doings.

A nurseryman of Tulare county shipped last week a carload of citrus trees to Milwaukee. The trees were Washington navels, budded to lemons, and will be sold for ornamental purposes to wealthy people of that city.

S. A. Pease, Horticultural Commissioner of San Bernardino county, writes that he now estimates the orange crop of that county as 80% of a full crop, and lemons at 95%, but states that these figures may change some with the weather.

The widespread dropping of green oranges is, causing considerable alarm on the part of orange growers near Oroville. It is thought that the recent rainstorm had something to do with it.

A meeting of orange growers will be held at Anaheim, Orange county, July 11, at which time the possibilities

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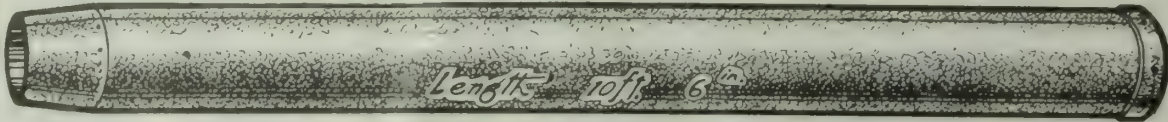
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of elimination of cull oranges from the markets of southern California will be taken up. It is claimed that such oranges do considerable damage to the California markets, as they replace large quantities of standard-grade oranges. Steps will also be taken at the meeting to work out a system by which these oranges may be made into such by-products as marmalade.

Raisins.

The California Associated Raisin Co. states that during the month of May there were 1905 tons of raisins shipped from the State, as compared with 903 tons for the same month last year.

Reports from Fresno state that present estimates are for a 100,000-ton raisin crop this year. This is about 15,000 tons above a normal crop and is within a few hundred tons of the 1912 crop, which was a record-breaking one.

The last of the 1913 crop of seedless raisins from Dinuba was shipped last week from that place by the Farmers' Union Packing Co. This company still has on hand about 600 tons of unsold muscat raisins, but hopes to clean them up before the new crop comes in.

Berries and Vegetables.

Cantaloupes are being grown quite extensively in the section around Fallon, Nevada, this year, and one grower is reported to have put in an order for 2000 crates. Although melons from that section are late, they have a fine flavor and find a ready market as a result.

According to reports from Merced and Stanislaus counties, the acreage devoted to the raising of sweet potatoes in those counties will be about up to normal this year. This territory usually produces about 75% of the sweet potatoes grown west of the Rocky Mountains.

General Farm Crops.

What is said to be the earliest cotton ever ginned in this country was that raised by Roy Ivey, of Imperial valley, which was taken to the gin last week. The cotton was from a field that has volunteered for the past three years.

According to E. Clemmons Horst, the hop crop this year will be about one-sixth less for the State than that of last year, or about 100,000 bales. He states that the outlook is for prices that will insure good profits to the growers.

A hundred bales of hops were sold in Healdsburg last week for 15c per

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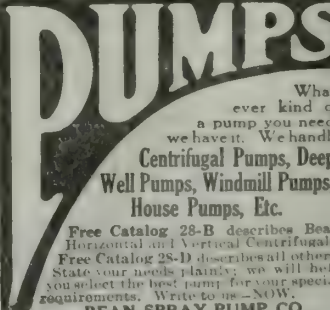
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pound. This shows an advance of 2c per pound over former quotations. Growers are still holding last year's crop to a large extent, as they believe that present prices are too low, considering the shortage of last year.

Estimates are that there will be about \$2,000,000 worth of rice raised in the State this year, as upward of 15,000 acres will be planted, which will yield between 2 and 2½ tons per acre. It now seems probable that this cereal will be one of the chief ones grown in the State in a few years, as the development during the past few years has been exceedingly large.

The big wheat and barley crops of the San Joaquin valley are now beginning to move, over 100 carloads having been shipped during the past two weeks. According to advices from Fresno, the average prices being paid the farmers so far this year are 90c per hundred for barley, \$4 per ton for alfalfa hay in the field, and from \$8 to \$10 for grain hay. The alfalfa crop in that section is big this year.

The heavy rains of last week did considerable damage to the hay and grain crops in the Poplar section of Tulare county. Reports from there state that several inches of water was left standing in the alfalfa fields and that the roads were thick with mud.

Miscellaneous Notes.

Army worms are reported as having done considerable damage in Stanislaus county during the past week, especially around Modesto. A number of farmers report damage and some of them are resorting to various methods in an effort to keep them off from their land.

A. F. Wagner, bee inspector of Imperial county, reports that the total value of honey from that county for the year will amount to about \$75,000. He also states that there is not a single case of European foul brood existing in the valley.

The Tulare Co-operative Poultry Association handled a total business last month of nearly \$6000. This was a little larger than that handled for the month previous. Prices paid for eggs during May were from 18c for No. 2 to 20c per dozen for selects.

Free Reference Books.

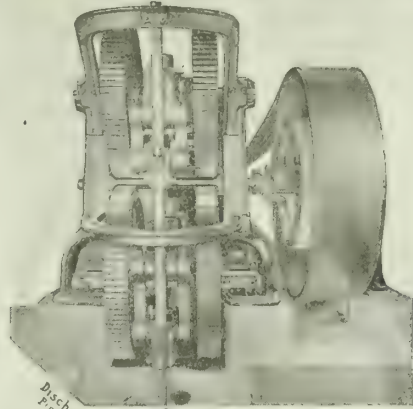
During the past week this office has received the yearly report of the California Development Board, and the Yearbook of the U. S. Department of Agriculture. The first-named report pertains especially to the resources of California and is full of valuable information concerning the farm crops and their relative standing in the State. While somewhat smaller, this year's Yearbook has much valuable matter that every farmer should be acquainted with. Both books are given free of charge for the asking.

To Pit Cherries Easily.

Select a new pen point and put it, inverted, into a new penholder. Insert this point into the cherry at the "dimple" where the stem has been. The stone can easily be removed, for the reversed pen point forms a curved groove in which the stone fits, and the holder acts as a handle. The knack is soon learned after experimenting on a few cherries, and this device greatly facilitates the drudgery of cherry-pitting.—J. H. R., Ohio.

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A satisfactory deep well pump must have a quick return on the down stroke, so that the down stroke of one bucket will be completed and the up stroke commenced before the other bucket has finished its up stroke. This lap of the strokes allows the valves to close quietly, eliminates water hammer and broken rods, permits of higher speed, gives large capacity and high efficiency. All of these conditions are well met with in the Pomona Pump.

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A great advantage of this is that everything is uniform. Making all our parts, from the castings to the finished article, in our own shops, with specially trained help, in the event of repairs being required we can furnish them promptly, with the assurance that they will fit when received and not require the services of an expert to set in place.

The Pomona Manufacturing Company is the largest builder of deep-well pumps in the West. We have the equipment, the ability and twelve years of success to point to.

Pump Catalog No. 54P Free—Write for it.

Our large illustrated pump catalogue number "54-P" contains full information about Pomona Pumps, together with some valuable data on irrigation subjects, water tables, etc. A copy will be sent free if you ask for it. When writing please state the depth of your well and any other information that you care to give.

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SAVE FORESTS FOR MOISTURE.

(Continued From Page 709.)

and successful farming. From this the farmer will see that for every acre of his farm he is interested in two to five acres of brush and forest land. The farmer in a timbered county has the same interests in the forests as a farmer in a non-timbered county and one more—a considerable part of the revenue of his county is paid by the forests of mature standing timber. As these forests are cut off and the tax income from them decreases, an increasing proportion of the tax will fall on the remaining lands and other property. Not only this, but the different communities in the counties will lose the benefits of the industry and employment which the sawmills, logging operations and shipping give.

ENEMIES OF FORESTS.—Gifford Pinchot, the father of forestry and conservation in this country, says that the two greatest enemies of the forests are fire and unwise taxation; and practically all other authorities on forestry and taxation agree with him.

Such progress has been made against forest fires during the past eight years that the loss of timber was reduced to a minimum during the season of 1913. In California this loss was less than 3/10,000 of 1%, or practically nothing.

This protection against forest fires is carried on by the Federal Forest Service, which protects over 11,000,000 acres of standing timber and many million acres of cover growth in the national forests under a system so thoroughly organized that more than 85% of the fires were discovered and put out before they had burned over as much as ten acres. The other timber forests—approximately 5,000,000 acres—were protected by the owners, who carried on the work individually, in co-operation with one another and, where possible, in co-operation with the Federal Forest Service. This protection is extended to the cut-over lands on which the people must depend for their future supply of timber, in order to prevent fires that would extend into the timber.

STATE PROTECTION NEEDED.—For the cover growth there is no protection from fire except that incidentally afforded by the Federal Forest Service, a few private associations, and the timber land owners. What is needed in California is a law providing that the State should protect its cover growth and at the same time co-operate with the Federal Forest Service and private owners in protecting the timbered forests.

A measure which would have secured the protection of the cover growth from fire and formed the necessary co-operation between the State and Federal Service and private owners was introduced in the last Legislature by Assemblyman Johnstone. It was known as Assembly bill 643, or "the Forest Fire Bill," and was prepared by the State Conservation Commission, assisted by the Federal Forest Service, and had the approval of many well known authorities on forest fire protection, including Gifford Pinchot and Federal Forester H. S. Graves. Although opposed by the State Forester, it passed both houses of the legislature, but did not receive the Governor's signature.

Commenting on the failure of this

bill, the Fifth National Conservation Congress, which assembled in Washington in November, 1913, says in the report of its Forestry Committee: "Until a bill similar to the one recommended to the last Legislature by the Conservation Commission, is signed by the Governor, discussion of other phases of the fire protection situation is not warranted. The State of California is responsible for the most serious obstacle in the way of reasonable fire protection within her borders."

SAVE BRUSH AND GRASS.—And right here the importance of preventing brush and grass fires should be emphasized. In view of the fact that over 200,000 acres of brush and grass lands were burned over during the dry season of 1913, destroying much stock range and many homes in the mountains and threatening the water supply, not only of farms but of several important cities, the necessity for preventing such fires is plain.

TAXATION.—While the owners and others can protect the forests from fire, the people must adjust the matter of taxation. As the forests in the timbered counties are cut off, the tendency is to increase the assessed valuations on the remainder in order to keep the county tax income from timber about the same. In addition to this, as the area of cut-over lands increases, the expense of fire protection forms an increasing burden on the timberland. Already in some of the timbered counties one-half of the timber, and in one county four-fifths of the timber, has been used. After it is all gone, the whole burden of taxation will fall on farms and other property because there will be no timber to tax.

Over sixty years ago the first sawmill was built in California. Since then the privately owned timberland has been paying proportionately increased taxes every year. The assessed valuation has doubled at least every nine or ten years, while the stumpage value of timber remains practically the same.

The intrinsic value of lumber is limited by the competition of other building materials, costs of transportation, and other things, so much that its increase in value cannot correspond with the increased tax and fire costs on standing timber.

For these reasons the timber must be cut; and forced cutting is always wasteful, because only the best can be marketed; and all that is cut above domestic needs must be shipped away. This means simply the ruthless destruction of our forests; and before long, consumers of lumber and other forest products will have to pay higher prices to other countries for them.

TAXATION MAY DESTROY.—The power of taxation, which is the power to destroy, lies with the people. By encouraging waste and destroying a crop which supplies the raw material for a great manufacturing industry, and otherwise does much to add to the prosperity of the people, taxation can become a parasite tending to destroy the very thing on which it depends. Such are the effects of the general property tax as applied to timber land in California today.

REFORESTATION SHOULD BE ENCOURAGED.—Two things are necessary: the best use of our present forests, and provision for another growth of timber to take their place. This is particularly true in California, because most of the original timber land will always be more valuable for growing

timber than any other crop, whereas much of the timber land east of the Rocky Mountains is more valuable for agriculture after the timber is cut off, hence will never be reforested.

For many reasons lumbering should be continued as a permanent industry in California. This cannot be done unless a continuous supply of raw material from the forests is provided. These conditions have been met in European countries and in Pennsylvania and other States by taxing timber only when it is cut and by exempting reforested cut-over lands from taxation for periods of 30 to 84 years.

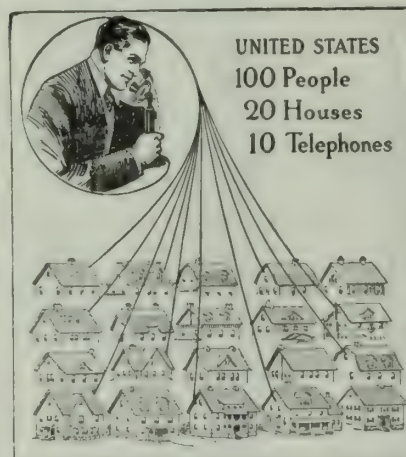
Taxing timber when it is cut is called a yield tax and is acknowledged to be the only just and equitable tax on timber by authorities on taxation and forestry. It recognizes the timber as a crop producing something necessary for the people, just as fruit, wheat, and other crops are necessary. It recognizes also that the owner gets his income only when the timber is cut and at no other time; therefore, the State should get its income at that time only. Under such a system industry flourishes because it pays, and, just like anything else that pays, its profits are shared by communities and the entire people.

In California today over one-fourth of the timber land has already been

cut over. If provision can be made for reforesting this while using the mature forests only as needed, the perpetuation of one of our most valuable natural resources will be insured, together with the great industries and benefits depending upon it.

A distinguished authority on taxation and forestry, Dr. Henry S. Drinker, president of Lehigh University, Pennsylvania, and president of the American Forestry Association, says:

"Of course, timber should bear its fair and proper share in the general duty and burden of taxation, but taxation is not a device to destroy our industries—it is intended to support the State by a fair contribution from our resources and industries. Timber lands should not be exempted from bearing their just share of taxation, but the tax should be apportioned according to ability as measured by income, and should be on the yield and should not be exacted years in advance of the yield. The time has come when there should be a separate general classification of timber lands, not with a view to their exemption in any sense from taxation, but to the apportionment of the taxation in such a manner that timber shall be grown and then be duly taxed on the yield when matured. Otherwise there will soon be no timber to tax."



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Silas Wayback, Farmer, and the Eight-Hour Law.

To the Editor: After reading the various articles in the Press on the proposed eight-hour labor law, and especially the one in the issue of May 30, 1914, entitled "What Is Biting the Farmer," I would like space enough to offer a few suggestions and opinions as a subscriber and farmer.

When they pass the eight-hour law, and the short-sighted majority led by a lot of San Francisco politicians, find they have the power, let us have the constitution amended to read as follows: "Any person, company, or corporation, engaged in the tilling of the soil, breeding or raising of animals, or feeding of same, for the purpose of slaughter and use as human food, that sells, or permits any foreman, superintendent, or agent to sell, any of aforesaid animals for more than 5c per pound, shall be guilty of a misdemeanor, and if found guilty, and convicted thereof, shall be fined not less than \$100 nor more than \$1000, etc., etc."

Now, Mr. Farmer, can you see the possibilities of the initiative, and the injustice that can be done by a well organized majority? No sane person will admit that they would stop at the eight-hour day and minimum wage; they would want cheaper beefsteak, bread, potatoes, and butter, and would

have power to get it, and the unorganized farmers are the prey in sight.

Not long since there was a movement started to make it a crime for the cattle raisers to sell any she-cattle under a certain age, for beef, and had it not been for the organized fight made against it by the stockmen of the United States, there is no doubt such a law would be in effect today. The idea was to make beef cheaper by legislation.

Or, according to the author of "What Is Biting the Farmer," the farmer and laboring man might go into cahoots, and enact the following: "Any person, company, or corporation that buys, or permits any foreman, superintendent, or agent to buy any farm produce from a farmer for less than the following prices—wheat, 2c per lb.; potatoes, 3c. per lb.; barley, 1½c per lb.; cows, 7c per lb. gross weight; steers, 8c per lb. gross weight; etc., etc.—shall be guilty of a misdemeanor, and if convicted thereof shall be fined not less than \$100 nor more than \$1000, etc."

Now is not one just as reasonable or silly as the other, and as the eight-hour law which is proposed?

Fellow farmers, let us show a solid front against all this present initiative-referendum rot, and organize and endeavor to have the present law amended so that before a proposition can become a law at least two-thirds of the registered voters must have voted and it shall have received a majority, and every voter to pass an examination by answering written questions, and show that he or she understands the proposed amendment or law before being allowed to vote on it.

It will be a fairly safe bet that none of the batch of propositions that are coming up at the next election are intended to help the farmer, but on the contrary most are apt to work directly against his interest; he being unorganized, the politicians rarely consider his interest of any importance. **SILAS WAYBACK, Farmer.**
Visalia.

WHITEWASH VS. SUNBURN.

To the Editor: I wrapped my walnut, peach, and apricot trees with newspaper but it has decayed; it was put on when the trees were planted about 1 year ago. Some people tell me to whitewash the trees. The newspaper is very poor to put on.—R. B., San Jose.

To the Editor: Is it a good idea to whitewash young fig trees?—A. N., Fresno.

[Whitewash does not hurt young trees because the breathing pores in the bark are in such minute proportion to those in the leaves. But it should be re-applied whenever it cracks off, because it does not take long to sunburn and seriously injure a tree. Newspaper stereotype matrixes are used in Sacramento county, costing a cent per sheet which makes two tree wrappers and will last 3 years. Unshaded tree trunks should be protected from sunburn which is injurious though not always severe enough to see the effects on the bark and no cause can be found for its sickness. Fig trees especially need protection, and whitewash does not hurt them, using air slacked lime. Protection may be had in later years by leaving shade as low as possible on the trees. —EDITOR.]

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With the Live Stock Men.

In order to profitably handle this year's large crop of alfalfa and barley crops, the Porterville Alfalfa Co., of Tulare county, has made arrangements with the Western Meat Co., of San Francisco, to feed 1000 head of native steers on its ranches in that section. The corrals will cover 10 acres of land and will be equipped with feed troughs, cement water troughs, etc. Hogs will be added to the ranch later to follow up the cattle.

Tulare county dairymen were paid \$53,737 for butter-fat received during the month of May by the Tulare and associated creameries. Prices paid ranged from 26 to 30 cents per pound, an increase of 1 cent per pound over the previous month's prices, although 3 cents per pound less than was paid for May, 1913.

Estimates made by one of the largest stockmen of Klamath Falls, Oregon, are that 500,000 pounds of wool will be shipped from that place during the next 30 days.

A model dairy is to be installed at the State hospital at Stockton. Reports from that place state that \$20,000 will be spent for buildings and \$12,000 for a herd of pure-bred Holstein cattle. Judging by the number of Holstein herds being maintained at the State institutions, it is evident that that breed is held in high esteem by State officials.

About \$70,000 was paid out by Fresno creameries last week for fat received during the month of May. The average price paid was 30 cents, the same as was paid for the month of April.

At a recent meeting of the Colusa County Swine Breeders' Association, plans were formulated to induce swine growers in every county of the State to organize similar associations. There is much good that such associations might accomplish, and it is to be hoped that more of them may be started at an early date.

E. H. Thompson and W. E. Herbert, dairymen, of Mount Vernon, Washing-

ton, have recently purchased the herd of pure-bred Holsteins owned by C. N. Whitmore of Ceres, Stanislaus county. This is one of the oldest herds of Holsteins in Stanislaus county, and large numbers of the offspring have aided in founding other herds in the county.

J. R. Allen, representing the American Guernsey Cattle Association, was in Petaluma, Sonoma county, last week, inspecting the live stock quarters at Kenilworth Park. With the exception of the buildings, he stated that the location was suitable for the maintenance of animals while in preparation for the live stock show at the Panama-Pacific Exposition next year.

A report from Porterville states that cattlemen are now passing through Hot Springs, near there, on their way to the summer mountain ranges.

At a meeting of the board of directors of the Sonoma and Marin county district fair, last week, it was decided to offer \$3,000 in cash prizes for live stock exhibited. It is also announced that harness races will be held four days during the fair. With county fairs to be held at six or seven places this season, together with the State Fair at Sacramento, breeders of all kinds of live stock should be selecting their best individuals and begin planning for the fair season.

At a meeting of the board of directors of the Livestock Breeders' Association, held in San Francisco June 20, a legislative committee was appointed to work in connection with the California Fruit Growers in an endeavor to defeat the universal eight-hour law and other proposed laws that are thought to be against the interests of farmers.

According to the U. S. Department of Agriculture, the demand for veal is rapidly increasing and calves are now selling for an average price of from \$8 to \$12, when two or three months old. Their advice is to sell dairy or dual-purpose bull calves as veal, in preference to holding them for steers.

A large number of the most prominent hog raisers of Imperial valley met at El Centro last week for the purpose of forming a hog raisers' association. The idea of the organization is to effectively quarantine the valley against cholera and inaugurate a better and more regular system of vaccination. The University of California now has most of the equipment installed for the manufacture of serum at the station in the valley, which will be a big help to the hog raisers of the association.

Between \$135,000 and \$140,000 was paid out to Kings county dairymen last week for milk and cream received during the month of May. Prices varied per pound from 27 to 28 cents.

Several of the purchasers at the George A. Smith sale of registered Holsteins were farmers who expect to go into the breeding business on a large scale. All of the animals sold will be kept in the State.

Cattle prices were steady to firm at the Portland Union Stock Yards last week, good grass steers selling for

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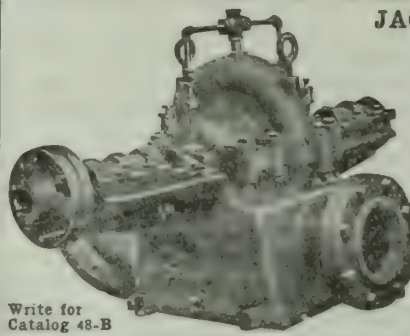
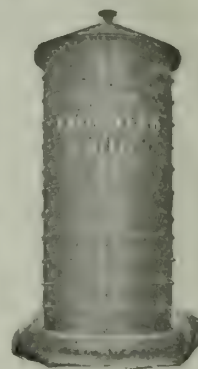
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A dairyman near Chico was arrested and paid a fine of \$10, last week, on complaint of the deputy state dairy inspector of that district. The inspector stated that the dairyman was disregarding the sanitation laws.

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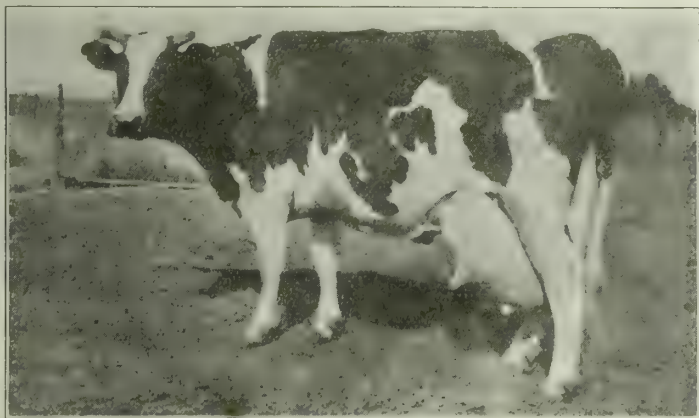
[Written for the PACIFIC RURAL PRESS]

Among the Holstein herds of the State that should be given due credit for the upbuilding of many herds of dairy cattle is the Creamcup herd, owned by M. M. Holdridge, of Modesto, Stanislaus county. This herd has recently been making some very nice records for the advanced registry, 22 of the cows having made between 18

of Riverside Sadie De Kol Burke.

The herd sire's dam is Novena Creamcup, a cow of show type and a large yearly production, with a 7-day record of 22.45 pounds of butter, and a 14-day record of 43 pounds of butter. She has been started on yearly test, making better than 70 pounds of fat for May.

It will be seen that Creamcup Pon-



Modesto Cleopatra, a Creamcup Matron.



Part of Creamcup Herd of Holsteins.

and 28 pounds of butter in seven days. These are most of them young cows with their third calf. Four of these cows have given over 90 pounds of milk in one day, freshening with third calf, one of them averaging 93 pounds of milk for seven days. Every cow in the milking string at this time has an A. R. O. record.

This herd has been built up by careful selection, most of the herd being raised by the owner from calves and yearlings, bought and developed. Females are sold out of the herd from time to time, as by keeping a limited number of milking cows the owner believes better work may be done with them.

A great deal of care is given the young stock. They have the whole milk for about four months, then skim-milk and grain until about one year old. This develops good feeders and makes a large-framed cow, and one that can handle a large amount of feed—a greedy cow is a good worker.

At the head of the herd is Creamcup Pontiac Burke, a bull of excellent type and dairy points. He has one of the most perfect heads I have ever seen. Although he is only three years old and has no heifers yet in milk, he has a choice bunch of heifers coming on. These show remarkable udder and vein development for calves and yearlings. He was sired by a son of King of the Pontiacs, half-brother of the world record cow, Pontiac Lass (44.18 pounds butter in seven days). His sire's dam is Ruby De Kol Burke, with a record of 25 pounds of butter in seven days. She is a sister

of Riverside Sadie De Kol Burke. He is a strong breeder. The young things are very uniform, have excellent heads, nice straight back line, short legs, in fact good dairy points, and are all nicely marked.

While a comparatively small herd, many cows from this herd have been sold for foundation purposes, and the owner has found the official test most profitable.

CABBAGE LICE.

To the Editor: Can you tell me how to get rid of a small bug which resembles lice, which infest our cabbage plants. The bugs are light green in color and some have wings. The plants which have bugs seem to be stunted and they have not grown since the bugs got on them. We have sprinkled sulphur on the plants, but it does no good. Can you give us a remedy?—J. E. S., Sacramento.

[This is a very hard pest if it has a chance to get the upper hand. It is held in check usually by ladybirds and internal parasites, but sometimes passes all bounds. It can be killed by spraying with kerosene emulsion, soap solutions, resin washes, etc., when the treatment begins early on the small plants, just as soon as you can see a few of the pests. If they get abundant, treatment seldom catches up and costs more than the cabbages are worth. In a small garden the pests can be kept down by beginning early with a garden hose if the pressure is

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good. It just naturally knocks them seems evident that the experience of off and they do not get back.—EDITOR.] the past two years with silos and silage will make this the banner year

Silo manufacturers report a brisk in the construction of these barrel-demand for silos this year, and it now shaped storehouses.

Pure-Bred Sales.

Following are the sales of pure-bred animals reported to us since our last issue containing this department:

BERKSHIRE SWINE.

Oak Grove Dairy Farm, Woodland, sold to F. R. Steel, Grants Pass, Ore., 1 bred gilt; F. B. Stetson, Napa, 1 bred gilt, 1 boar pig; R. S. Currey, Dixon, 4 gilts; Gow & Allen, Dixon, 3 bred gilts; State Farm, Davis, Ravenwood Longfellow 10th, 136430; W. H. Hord, Linden, 2 bred gilts; F. Haman, Germantown, 1 boar pig; P. Blackford, Wheatland, 1 boar pig, 2 sow pigs; Cook & Barnes, Alturas, 1 service boar; Ricconi Bros., Mountain View, 1 service boar; E. E. Greenough, Merced, 1 service boar; R. J. Vivarelli, Santa Rosa, 1 service boar; G. C. Meckfessel, Berlin, 1 service boar; A. E. Walling, Madera, 1 service boar; A. A. Souza, Woodland, 1 service boar; A. & M. Bemmerly, Woodland, 1 service boar; A. Brazil, Goshen, 1 service boar, 1 sow pig; T. Kitto, Anderson, 1 service boar; E. C. Hart, Little Shasta, 1 boar pig; R. B. Canfield, Santa Barbara, 1 bred sow; J. L. Mendenhall, Williams, 1 service boar; H. C. Hinckley, Grafton, 5 bred sows; J. Pfister, Placerville, 3 bred gilts, 1 bred sow; Hughes Bros., Woodland, 2 sow pigs; Kaupke Bros., Woodland, 2 sow pigs, 2 gilts, and half interest in boar; E. W. Van Seuden, Lodi, 5 gilts; J. H. Rosseter, Burke, 1 boar pig; C. T. Laugenour, Woodland, 1 boar pig; G. A. Zane, Woodland, 2 sow pigs; Neil Zane, Woodland, 1 sow pig, 1 boar pig; H. Hughson, Woodland, 1 boar pig; C. Hughson, Woodland, 1 boar pig; H. W. Shoober, Montague, 2 sow pigs, 1 boar pig; Huston Farms Co., Woodland, 3 service boars; Everett Howard, Woodland, 1 sow pig; Miller & Lux, San Francisco, 4 boars.

Brae Bourne Ranch, Santa Rosa, sold to G. A. Pope, La Honda, 1 boar; Mr. Anderson, Windsor, 1 boar; W. L. Cunningham, Windsor, 1 boar; Miller & Lux, San Francisco, 6 sows and 1 boar; Mr. McArthur, Santa Rosa, 1 bred sow. Also Collie dogs to the following: H. P. Rosenberg, Mill Valley; O. I. Runnels, Berkeley; C. Stark, Morganhill; D. R. Keith, Santa Rosa; G. B. McKinney, Santa Rosa; Bertha Miller, Petaluma; and E. H. Brown, Santa Rosa.

HOLSTEIN CATTLE.

F. and H. Stenzel, San Lorenzo, sold to Anita Land Co., San Francisco, Estudillo Cornucopia Johana; to E. Powers, Manteca, Estudillo De Kol Kate Segis; to W. E. Oakes, Modesto, Estudillo; to W. S. Murphy, Milpitas, Estudillo Alban De Kol Segis; to Lin-

wood Farms, Santa Cruz, Estudillo De Kol Segis Korndyke; to Wm. Valk, Farmington, Estudillo Cornucopia Johan Lad; to Jas. A. Price, Lakeport, Estudillo De Kol Artie Segis.

J. W. Benoit, Modesto, sold to U. Hartman, Crockett, a yearling bull, grandson of Hermana A.

SMITH HOLSTEIN SALE.

[Written for the PACIFIC RURAL PRESS]

The banquet given to the California Holstein Breeders' Association by Geo. A. Smith, of Corcoran, on the evening of June 15, together with the auction sale of 81 head of registered Holsteins the following day at his ranch nearby, were the events of the season so far as Holstein doings are concerned.

There were 150 at the banquet, which was made into a business meeting of the Association.

D. O. Lively, chief of the live stock department of the Panama-Pacific Exposition, was in attendance and gave the meeting an interesting review of what the Exposition officials hoped to accomplish in the way of view herds, and explained the need of strong live stock organizations if the industry is to be advanced as it should be in this State today. He referred to the fact that no action has been taken, either by the State or by counties, to provide any appropriation for live stock at the Exposition, and cited that as one instance where wide-awake organizations could do an immense amount of good.

The secretary of the Association, James McCallister, of Chino, told the meeting of his recent attendance at the National Holstein-Friesian Association's meeting at Chicago, reporting that that organization had appropriated \$5,000 to be used for view herds or in other ways as the committee might see fit, at the Panama-Pacific Exposition. He stated that A. W. Morris, of Woodland, had been appointed president of the committee, to report on this plan, together with John L. Smith of Washington and W. B. Barney of Iowa.

Other talks were made by Mr. Guiberson of Corcoran, A. W. Morris of Woodland, and Mr. Taylor of Whittier. Geo. A. Smith was elected as one of the executive committee in the place of Mr. Kimball, of Modesto, resigned.

THE SALE.—As this was the first catalogued sale of registered Holsteins ever held in the State, considerable interest was manifested in the prices that would be received, and in this respect it is gratifying to know that the 81 head sold for a total of \$19,950, or an average of nearly \$250 each. As 75 per cent of those offered were animals under 1½ years old, and as the terms were strictly cash, the sale may be said to have been entirely satisfactory to the owner.

A large portion of the animals offered were heifers, 50 of which brought \$10,095, or an average of \$202 each; 14 cows sold for \$5,585, or an average of \$399 each; 11 bulls sold for \$3,295, or an average of \$300.

The top price of all animals sold was \$1,000, received for the bull Major Woodcrest Segis, a four-year-old son of Sir Paul Beets Segis, 47216, that went to John Johnson, Jr., of San Diego. The next best price was that paid by D. L. Thompson, of Los Angeles, who paid \$560 for the cow Lady Holland Midget De Kol, 195475, a

granddaughter of the bull Homestead B. Paul De Kol.

Seventy-five head of the lot went to the following named persons: D. L. Thompson, Los Angeles, 5 head; Whittier State School, Whittier, 7 head; Morris & Son, Woodland, 1 head; J. S. Bird, Riverside, 10 head; Mr. Horsey, Corcoran, 1 head; Napa State Hospital, Napa, 4 head; L. H. Arnold, San Diego, 6 head; Ray Vertrees, San Diego, 2 head; E. R. Putz, Laton, 13 head; Jas. McCallister, Chino, 5 head;

H. H. Newman, Visalia, 3 head; C. C. Lester, Gilroy, 6 head; J. Raymond, Tulare, 2 head; C. S. Bond, San Diego, 1 head; U. J. Martinelli, Petaluma, 2 head; Geo. H. Ennis, Los Angeles, 1 head; Dr. Ben Stetson, Napa, 2 head; J. H. Harlan, Woodland, 3 head; A. Whaley, Visalia, 1 head; J. P. Phillips, 1 head.

The sale was cried by Ben Rhodes, of Los Angeles, who conducted the sale in his usual efficient manner, satisfying buyers and seller alike.



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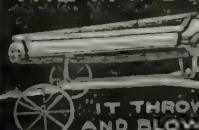
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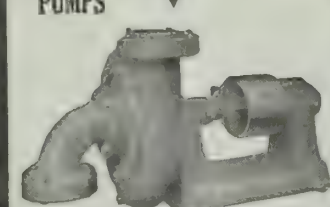
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Draft Horses in Chicago.

To the Editor: Through the courtesy of the City Collector of Chicago, the Percheron Society of America has been furnished with exact data relative to the number of vehicles in use in the city for the years ending April 30, 1911, April 30, 1913, and April 30, 1914. The figures show a decrease of 1804 one-horse vehicles, 1789 two-horse vehicles, 75 three-horse vehicles, 17 four-horse vehicles, and an increase of 2012 auto delivery wagons of less than one ton, and an increase of 1396 auto-trucks of over one ton.

The decrease in one-horse vehicles is properly to be credited to the rapidly increasing use of auto-trucks less than one ton, which are particularly adapted to light delivery work. The decrease in two-horse vehicles is attributed by the men who are best informed on team requirements in Chicago to be due to the elimination of light pairs which are used for delivery work by the large department stores and to the reduction in light pairs owned by well-to-do persons who used them for pleasure purposes. The closing out of a large number of livery stables and consequent sale of driving pairs owned by them, is responsible for several hundred horses, so that it appears certain that the reduction of 1789 two-horse vehicles which has occurred between April 30, 1911, and April 30, 1914, is due to causes just noted and not to any reduction in the number of draft pairs now in use; in fact, it is the judgment of some of the best informed horsemen at the Union Stock Yards, after a review of the above figures, that there has actually been an increase in draft pairs. It is also estimated by those who are particularly well acquainted with the use of auto-trucks in Chicago that the gasoline-propelled business vehicles have displaced a little more than 10,000 horses.

The auto-trucks over one ton are not nearly as numerous as is popularly supposed, for, as noted above, there are but 1759 in use in Chicago. The firms using these have found by experience that they are profitable only on rather long hauls, five miles or over, and on work at which they can be kept in continuous operation. Short hauls with frequent stops and duties which require the vehicles to stand at rest for any length of time are not favorable to economical use of auto-trucks, and for this reason they have been abandoned by a great many firms which undertook to use them. There is no question but that the use of the heavy truck will increase, however, but the line of work in which they are most efficient is long-haul delivery of heavy loads, in which they are more properly competitors of the railroads.

The actual figures and close observations by men who are particularly well informed on city teaming conditions, indicate that there is no likelihood of a serious curtailment in the city demand for high-class draft horses.

WAYNE DINSMORE,
Secretary.

CATCHING THE FARM FLY.

[Written for the PACIFIC RURAL PRESS]

Much of the disease and filth that is traceable to flies could be largely overcome on farms and dairies if more fly traps were put into use, for experience has shown that surprising results are obtained where a systematic effort

is made to clean up the flies in this way.

On a dairy recently visited we saw a number of home-made fly traps scattered over the barnyard and in the hog pens. The owner told us that it was nothing unusual to catch a trap full in three or four days. These traps had been made by making a light wooden frame about 2½ feet high and 12 inches square at top and bottom. These were covered with a galvanized screen, a 1-inch board being used for the top and bottom. A round hole was cut in the bottom, about six inches in diameter, into which a cone-shaped piece of screen was tacked. The top of the cone was left open so that the flies could crawl up through, but were unable to find the way out.

These traps were set on top of milk-cans, a little sour milk being used for bait. Other bait which may be used is bread and milk, which is said to be very effective. This should be renewed often, so that it does not dry up. Buttermilk is also good, and tainted meat is said to be still better.

The cost of these traps is a mere trifle, and a number scattered over those places which are most apt to be fly breeding places will save the dairyman and housewife much grief.

VETERINARY QUESTIONS.

[Answered by DR. E. J. CREELEY, San Francisco Veterinary College.]

RUPTURED MULE.

To the Editor: Can your veterinarian advise me how to treat an 18-month-old mule colt, with a rupture on the median line, midway from the navel back? Rupture has been apparent for a year, gets no larger and can be entirely reduced by pressure from the hand.—M. W. W. Manton.

The animal will outgrow this. If he should not it can be easily removed by an operation.

LEAKY TEAT.

To the Editor: One of my cows looses all of the milk from one teat. It just comes out when she walks. Could you tell me if there is anything that I can do to prevent it?—H. B. H., Petaluma.

Paint the canal with Tinct. Iodine and Spirits Camphor, once daily.

PIG WITH SCALDED SKIN.

To the Editor: I have a pig two months old that looks like he had been scalded. The skin peels off and he is sore and inflamed in the cracked places. This is all over him, except his back, his head and eyes being the same way. He seems to eat all right and does not show any signs of falling off. The rest of the pigs in the same lot are all right. I am feeding them sweet milk and a small amount of middlings and a small quantity of whole wheat. Will you tell me what the matter is with him and what to do for him?—S. P. G., Caruthers.

This may be an infection. He should be separated from the others. Wash and anoint once daily with pure olive oil 12 ounces, and 4 ounces of Spirits of Camphor.

Live Stock Directory

Rate in this directory, 3c per word each issue; or if carried weekly for one year, 2½c per word.

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REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal. A. B. Humphrey, Prop.

I have to offer a limited number of young Holstein bulls. Write for particulars, J. W. Benoit, Route 2, Modesto, Cal.

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ELDER CREEK JERSEY FARM—Reg. Jersey Bulls for sale. R. 4, Sacramento, Cal.

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REGISTERED HOLSTEINS.—A. W. Morris & Sons Corp., Importers and Breeders, Woodland, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

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Poultry Topics for June.

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

June and July are the months for inquiries. Most of the hatching is done and just when the poultryman's troubles should be over, most of them are just beginning; hence the inquiries. So I am going to give this week's paper over to catching up with the questions that have come in the last two weeks.

SELLING BREEDERS.—Our first letter is from a lady who has been trying to break into the fancy, and thinks she has a grievance because, having paid a month's advertising in advance, she got no replies. The only thing to do in a case of this kind is to hold a little confab with "self". Just ask yourself if you were going to purchase eggs or poultry, whether you would write to the person whose name you saw for the first time, or the person whose name seemed to be familiar from seeing it in the same paper every week, or month, as the case may be. People don't separate themselves from money so easily, it takes time and some printers ink to establish a business of any kind. It takes perseverance, honest endeavor, and at first, some faith in yourself and the quality of birds you have to offer. It takes much more than these things, but these are sufficient to show you that you need not despair. Keep at it, that is keep your name before the public until they have had time to see that you are not one of those who are here today and gone tomorrow.

LAW AND PRESERVING.

Question. In the May 23 issue, of the PRESS is discussed the removal of the rooster from the laying hens for the summer. I have heard much about this plan from everywhere, but there is one point which I have not seen mentioned. Most farmers give their chickens free range and most of them keep roosters right along. If I should remove my roosters from my flock, and the neighbors roosters should mingle with my hens (as they do all the time) wouldn't this mean that my hens would follow their roosters and eventually I would lose them? You see as it is now my roosters keep off the neighbors chickens, more or less, but if I kill them, this would not be so. What about this? Am I correct or would the case be different and instead of my hens going, the neighbors

roosters would come to me? The latter would be quite as objectionable for me. I hope to hear from you about this in the PRESS, also in preserving eggs in water-glass. Should the eggs of consecutive days be put on top of each other, as they are gathered, or should each jar or container be filled at one time?—SUBSCRIBER.

Not necessarily, the eggs can be put in the jar as they are gathered, the fresher they are the better; only see that the liquid covers the eggs at all times.

I wish the first question of Subscriber could be disposed of as easily as the last. The fact is the question of whose roosters or hens would stray is not one for these pages. No one but a lawyer could answer it. The proper thing to do is to lay the question before your neighbors and tell them you don't want to feed useless birds all summer and very likely they don't either, and will be willing to do as you do. I have a neighbor just across the street whose hens have range and he has not kept a rooster for two years, while I have had about twenty. Of course they are all yarded but his hens are within sound of their voices, and they have never come over to find out whether they were yarded or loose. It would appear to me as if you were meeting trouble half way, because in California everybody is supposed to take care of their own stock, and if you don't want your neighbor's roosters coming on your premises, all you have to do is tell him to keep them to home. If he does not do so you can kill them, if you are so minded, and throw them on his land. Notify him that they are on his premises and he can't do a thing. This is not what any of us want to do, but it is California law just the same, and when a man knows the law he should keep within it and save trouble.

DUCKS, GEESE OR CHICKENS.

To the Editor: Having just moved on to a new place am trying to raise what is most profitable with quickest returns. Which would be most profitable for the holiday season, ducks, geese, or chickens, and when should they be hatched for stated seasons? If ducks or geese, what treatment should they receive and how fed? Should incubator be regulated as for chickens? At what period is a white Leghorn a broiler and a fryer? Also what age is most profitable to sell?—MRS. J. L. G.

Unless you have a grass range, geese are out of the running, besides being too late in the season for this year. There is profit in geese but you need range and pasture, and they must be gotten out early as little goslings cannot stand heat.

Ducks give the quickest returns of anything in the poultry line and can be hatched and handled at any and all seasons if you are willing to give them care. Young ducks, of the Pekin or Alysbury breeds, are usually ready for sale at from ten to twelve weeks old, and should not be carried past that stage. If you are near a market that caters to the Hebrew trade, you should get a list of all Jewish holidays, then set your eggs so that your ducks will be ready for table at those times.

Duck eggs require more moisture than hen eggs, in an incubator, and one or two degrees lower in heat. Everything else the same. Ducklings require very little heat after hatching

but they must be kept strictly dry and fed five or six times a day with moist mash. Always give a dish of fresh drinking water to ducklings when you give feed, for otherwise they cannot eat. Good dry sand too, should be kept where they can help themselves. Feed rolled oats and bran the first few days, just moist, not wet. At one week old make a mash, of equal parts corn meal, shorts, rolled oats, and bran, with 10% of beef scraps. As the ducklings grow older increase the quantity of beef scraps to 20%, and add more cornmeal, feeding all they will eat at each meal.

A Leghorn is a small broiler at 1½ up to 1½ pounds. After that a large broiler, up to two pounds, and a fryer from two to three. At this season small broilers go begging, as no one wants them. They sell best in winter when there is a scarcity. Age has nothing to do with broilers; they must weigh so much, must be plump and in good condition; that is all that is required.

Ducks are 18c. a pound at present, in Los Angeles. Now with young ducks going the limit of twelve weeks, and weighing from six to eight pounds each, there is quite a handsome profit for the work.

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INDIAN RUNNER DUCKS—Prize stock, Fawn and White. Six good laying ducks, \$7. Three fine drakes, \$2 each. Baby ducks, 25c each. Hatching eggs, 75c dozen. Mrs. Nutman, 295 Page St., San Jose.

CHOICE COCKERELS—Will sell a few thoroughbred Mottled Ancona cockerels; fine next season breeders; prices reasonable. James Harper, Pacific Grove, Cal.

INCUBATOR CHICKS—White Rock, Black Minorca, White, Brown and Buff Leghorns. All high-class stock. Send for booklet of prices. Mahajo Farm, P. O. Box 597, Sacramento, Cal.

BARRED PLYMOUTH ROCKS—Winners at New York, Kansas and California shows. Eggs for hatching and choice stock for sale. Chas. H. Voden, Box 396, Los Gatos, Cal.

PETALUMA HATCHERY—Now booking orders for Fall. August, September and October chicks are highly profitable. Send for circular. L. W. Clark, Petaluma, Cal.

SEND for our Special Poultry Supply Catalogue. Sent on request ONLY. Pacific Coast Mail Order House, 229-231 So. Los Angeles St., Los Angeles, Cal.

DIABLO WHITE ROCKS—EGGS FOR HATCHING. Special exhibition matings, \$7.50 per 15; utility, \$2 per 15; \$10 per 100. C. J. Struby, Concord, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

EGGS FOR HATCHING—Pure-bred White Rocks, \$1 per setting; \$6 per 100; until September 1. Mrs. J. B. Tupper, Ceres.

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LUFF AND WHITE ORPINGTONS. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

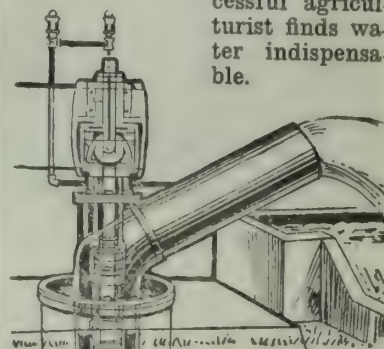
RINGNECK PHEASANTS for sale. T. D. Morris, Agua Caliente, Cal.

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THOROUGHbred Belgians with or without pedigrees. Old Hickory Supply Co., Dept. 25, San Francisco.

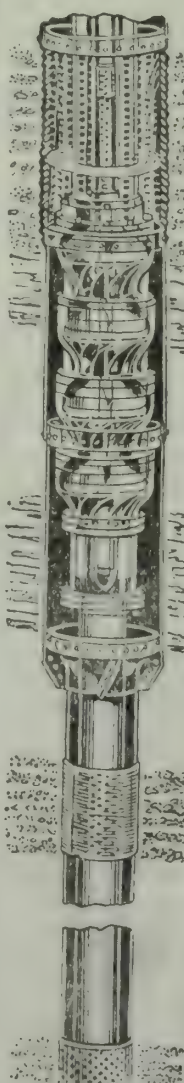
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with details of a Complete System of Feeding.

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Exposition Egg-Laying Contest.

The following rules and regulations have been received from the office of D. O. Lively, chief of the live stock department at the Panama-Pacific Exposition, which have to do with the international egg-laying contest that will be held in connection with the exposition, starting November 1, 1914, and continuing until October 31, 1915:

This universal egg-laying contest will be conducted by the Department of Live Stock of the Panama-Pacific International Exposition and under the supervision of the Poultry Division of the College of Agriculture and Experiment Station of the University of California.

The record keeping and general management of the birds in the contest will be in charge of the Poultry Division of the University of California.

Each pen must consist of 10 pure-bred pullets of the same variety, which are not less than seven or more than eleven months old on November 1, 1914.

Competition is open to the world. All birds in contesting pens will be fed, housed and handled alike.

Certified individual and pen records will be mailed to each contestant monthly.

Birds which are diseased, which appear to be outside of age limits, and which are not typical of the variety represented, or which for any other reason are not deemed suitable for the contest, will be returned to the owner. No diseased birds will be permitted on the grounds.

Birds which develop disease, vicious habits such as egg eating or feather eating, or become incapacitated for laying from any cause, must be replaced by the owner with others of the same age and variety.

While all birds in the competition will be given the best feed and care, and every precaution taken against loss by disease or otherwise, yet none of the parties connected with the contest will be responsible should such losses occur.

All eggs produced during the contest shall become the property of the Department of Live Stock of the Panama-Pacific International Exposition. No eggs for hatching purposes will be sold from any of the contesting pens, except as provided in Rule No. 17.

The competition for premiums will be decided by the total number of marketable eggs produced by each pen. Eggs under weight or otherwise unmarketable will not be counted in the score. Any pen, the eggs from

which do not attain an average weight of 24 oz. per dozen before the expiration of the first four months of the contest to be ineligible for prizes.

To the owner of the pen making the highest annual egg record will be awarded a handsome trophy and \$75 in gold. The second prize will be a trophy and \$50 in gold; the third prize a trophy and \$25 in gold, and the fourth prize \$10 in gold.

The leading pen of each variety will be awarded a medal and \$10 in cash.

The owner of the hen making the highest individual record will be awarded a trophy and \$15 in gold, second prize \$10, and third prize \$5.

The owner of each hen making a record of over 200 eggs will be awarded an Exposition trophy.

Trophies will be awarded monthly to the pen making the highest record for the month.

Not less than three pens must be entered and shown in order that a variety may be represented in the contest in competition for the special variety prizes. In case there are less than three entries of any one variety, pens may compete in other classes where eligible. All entries will be booked in the order received, and all entries will close on October 15, 1914.

All pens will be numbered and the records made will be credited to these numbers. The name and address of the owner may appear upon the pen and in the records if desired. This will be done only on his expressed request. This is for the protection of those exhibitors whose birds fail to make a creditable record.

All birds to be bred by and to be the property of the competitor. The competitor must have owned the parent birds of the pullets entered.

No. 17. Any exhibitor who desires may include a male bird in each pen entered in this contest, and he may have the first privilege of securing eggs for his own use from such pen. The right is reserved by the Department of Live Stock to sell eggs for hatching purposes from pens which include male birds. A uniform charge of \$1.50 per 15 eggs will be made to cover the cost of baskets, packing, shipping, labor etc. All eggs will be packed in baskets.

All fowls must be shipped, express prepaid, and addressed to the Egg-Laying Contest, care President of the Panama-Pacific International Exposition. No fowls will be received for this contest later than October 30, 1914.

All shipments of birds properly addressed must be made so as to reach the grounds of the Department of Live Stock of the Panama-Pacific International Exposition not later than October 30th, though they may be received as early as October 1, 1914.

An entry fee of \$25 is required for each pen; check or money order for \$10 must accompany the application, and the balance must be paid on or before October 15, 1914. All payments must be made to the Panama-Pacific International Exposition and sent to D. O. Lively, Chief of the Department of Live Stock.

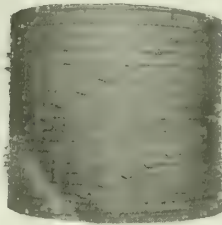
No appeal from any decision of the management in any matter pertaining to the contest will be entertained.

[Those desiring to enter pens should communicate with D. O. Lively, Exposition building, San Francisco, at once for entry blanks, etc.—EDITOR.]

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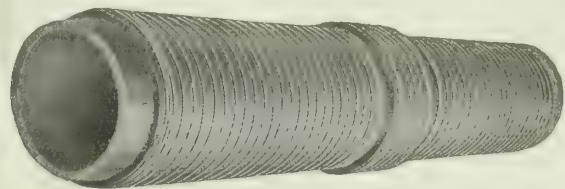


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The Home Circle.

EFFICIENCY IN THE KITCHEN.

[Paper read before Agricultural Extension Club of Grass Valley, by MRS. ROBERT NYE.]

For centuries past woman has considered her time worth little or nothing, but the general broadening of woman's horizon, her increasing value in the business world, and, perhaps, the extension of suffrage, are changing the old estimate. It is a fact significant of this change that not only the woman's periodicals, but also such magazines as the Review of Reviews are discussing household efficiency. The old saying was "The chief end of woman is economy," but the 92% of American housewives who do the bulk of their own housework are learning that the chief end of woman is economy of time and strength.

The greatest factor in the problem is personal efficiency, or the scientific mental attitude. A famous painter on being asked with what he mixed his colors, answered "With brains, sir." The modern home demands much less manual skill, but vastly more mental and spiritual qualities.

In the effort for efficiency, however, keep yourself sunny and sane. Do not get impatient because, with all the helps and labor saving devices, you still find housekeeping work. It always will be work, but let it be intelligent work. It is better to spend an hour in learning what foods are digestible and nutritious than in making an elaborate dessert that is neither digestible nor nutritious.

Be open minded both to new methods and to old experience, remembering that homes are individual and not institutional. The standardized conditions that the efficiency engineer depends on are not the commonly accepted standards, but the conditions best suited to the personal needs of the worker.

For instance, the standard table height is 30 inches but the standardized height is the one that fits you and your work. We would not expect Mrs. Corey and Mrs. Hoag to use the standard height in kitchen arrangements. A difference of two inches in the height of table, sink, stove, ironing board, or tubs, makes the difference between backache and no backache.

ference between backache and no backache.

I was noticing the other day, the spring board on which the bookkeepers in the bank stand and wondered if some such device would not be a relief to the tired muscles of the houseworker. I do know that a soft rug under the feet lessens the fatigue in ironing. And in this connection may I suggest that there is a close relation between runover heels and headaches.

Arrange for plentiful light in your kitchens, and place your work table in such a way that the light will come from the side rather than from directly in front. Eye strain produces fatigue quickly but is seldom considered. Do not either wash or iron in direct sunlight.

The convenient placing of utensils is an important factor. Your kitchen is a workshop and it is not untidy to have tools in sight and in reach. It takes unnecessary time and strength to open drawers and cupboards for things in constant use. Light utensils should be placed above table level, as they require only an arm movement, but heavy utensils lower. For there is less muscular strain in lifting up than in lifting down, the forward bend being easier than the backward.

If you haven't plenty of table space—make more. A folding table, a drop shelf, or a big box will help out, while a table on casters will save many steps. And, by the way, learn to use a tray.

Shelving, too, should be plentiful, some open, some closed, with sliding doors if possible. Under every cupboard of closed in shelves as well as above every chest of drawers have an open shelf at table level. But do away with dirt catchers, such as shelves behind a stove, and box in your hot water boilers.

If possible, have a screened in dumb-waiter running from kitchen or pantry to the cellar. In this climate it will save not only steps but an ice bill.

Another faithful servant is the fireless cooker, needing no watching to prevent burning or boiling over, and working while you sleep or attend club meetings.

The ship's gallery and the dining car kitchen have given us many suggestions on compact arrangement. For illustrations and diagrams I would refer you to the February, 1914 Review of Reviews, the Womans' Home Companion for April, 1913, and to the many other publications devoted to house plans and household economics.

Count as well invested, money spent for a book or magazine that gives you even one helpful hint. Time and strength are the housekeeper's capital and a step saved or a penny earned is a maxim for kitchen efficiency.

The Precise Man.

"It looks like rain."

"I beg your pardon."

"I say it looks like rain."

"What does?"

"The weather."

"The weather, my dear sir, is a condition. Rain is water in the act of falling from the clouds. It is impossible that they should look alike."

"What I meant was that the sky looked like rain."

"Equally impossible. The sky is the blue vault above us—the seeming arch or dome that we call the heavens. It does not resemble falling water in the least."

"Well, then, if you are so thunder-

ingly particular, it looks as if it would rain."

"As if what would rain?"

"The weather, of course."

"The weather, as before stated, being a condition, cannot rain."

"The clouds then, confound you! I may not know as much about it as you do, but I've got enough sense to get in out of it, and you haven't," said the man, as he raised his umbrella and walked away in a huff.

The Doctor—"Mrs. Murphy, you must be at your husband's side constantly, as you will need to hand him something every little while."

Mrs. Murphy—"Niver, doctor! Fur be it from me to hit a man when he's down."

An American recently forwarded a letter to a neighboring town, requesting the postmaster to deliver it "to any respectable attorney."

After ten days it was returned with the significant endorsement, "None here."

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Our Young Folks

Grandpa's Birthday Present.

Rosalie tried bravely to eat her breakfast and make believe that she was happy, but it was useless. A big tear got the better of her and splashed down on her plate. It was grandpa's birthday, too, and so eager had she been for it to come that she had counted the days for weeks and weeks. But now that it was here she was just as miserable as a little girl could be, when she had expected to be so gay—and all because of Jack's selfishness.

"Perhaps you have been selfish, too," whispered a little voice; but Rosalie would not listen to it.

Uncle James and Aunt Elizabeth had come down from the city with cunning Baby Ruth, who was just beginning to toddle. They would all go to grandpa's farm in the big touring car. All the other uncles and aunts and cousins would be there, too. There would be a wonderful dinner, then some uncle would make a speech congratulating grandpa, then they would all give him their presents.

This time she and Jack had made up their minds to buy something very fine indeed, because he was such a splendid grandpa, always ready to join in their games, and he told such capital stories without being teased. So Rosalie had saved all her nickels for two whole months to help buy a pair of velvet slippers. Not once had she even bought a sack of pop-corn, for velvet is expensive. Once she had thought that she would have to borrow a lot from her missionary box, but Aunt Ella said: "Oh, I would not do that. Let me see! When I entertain my club, I would like to have a little girl to open the door and to help me serve; I think that would be worth a quarter. And an industrious boy might make several dimes digging the dandelions on my lawn."

How hard they had both worked, until they had two big round dollars apiece! But when they went to buy the slippers, Jack insisted on getting a pair with a pug dog's head on them, just a common dog's head, when there was a pair with a perfectly beautiful bunch of pink roses on them.

Jack said that it was such a splendid

dog, just ready to growl, and that grandpa would not want a bunch of roses on his slippers like a sissy. And when she had declared that she would not buy that horrid ugly dog's head, Jack had called her a spoiled baby who always wanted her own way, right before Mr. Brown.

Finally the salesman had suggested that they take one of each and let grandpa decide for himself. This they had done, although neither of them felt very happy over it.

Rosalie had taken her slipper and run home by the back street; she was too angry to wish to meet any of her little friends. When Jack asked her to take his, too, so that he could go to the ball game, she walked right past him with her chin in the air, and she would not even look at him.

"Is my little girl sick this morning?" asked mamma, when she had pushed her plate away without touching her waffles. Rosalie only shook her head; she was too unhappy even to smile back at mamma.

But when she was dressed and all ready to start, she took a package out of her drawer and slipped out the side door.

Papa was just running the car out, have to spend some time getting it ready. It was only three blocks to the shoe store, and if she ran all the way they would not miss her.

Sure enough, when she got back, papa was vigorously pumping a tire. She slipped into her place and was soon having a romp with Baby Ruth. It was a very happy little girl, after all, that started for grandpa's. The clouds of the early morning had all passed away.

When their turn should come to present their gift, they had planned to take grandpa's shoes off and put the slippers on before letting him see them. So when Uncle Jack motioned for them to come forward, Rosalie quickly removed the left shoe and triumphantly drew on a slipper of royal purple velvet on which was embroidered a perfectly splendid pug dog's head in yellow and tan; while Jack, too proud to look at either Rosalie or her gift awkwardly fitted on the other foot a blue slipper decorated with a lovely wreath of pink roses.

Grandpa placed his feet on the fender, proudly, to exhibit his present.

"Why, children!" exclaimed Aunt Elizabeth, who always does everything correctly, "What an odd combination! Why didn't you get mates?"

Grandpa eyed them curiously over the top of his glasses, then looked from one blushing face to the other, inquiringly.

"You changed yours!" accused Jack.

"You changed yours, too!" declared his sister. "I thought perhaps grandpa might like a dog best after all, as he was once a boy."

Then the whole story came out: their quarrel, the unhappy night, and how finally they had felt so ashamed that each one had slipped back to change the slipper and surprise the other!

After that it wasn't a bit hard to make up.—Alice Lee Hall, in Sunday School Times.

The youth who was smoking a cigarette opposite the monkey's cage took another from his pocket. "Would it do any harm," he asked, "if I offered him one of these?" "Not a bit," responded the attendant, "he wouldn't touch it. A monkey isn't half as big a fool as he looks."

True and Tragic.

A number of years ago some miners in Wales, in exploring an old disused pit, found the body of a young man dressed in a fashion long out of date. The peculiar action of the air of the mine was such as preserved the body so perfectly that it appeared asleep rather than dead.

The miners were puzzled at the circumstances. No one in the district had been missed within their remembrance, and at last it was resolved to bring in the oldest inhabitant—an old lady over eighty years old, who had lived single in the village all her life.

When she was taken into the room where the dead man lay, a strange thing occurred. The old lady fell on the corpse and kissed it, and addressed it by every term of endearment spoken in a by-gone generation. He was her only love, and she had waited for him her long life. She knew he had not forsaken her.

The old lady and young man had been betrothed sixty years before. Her lover had disappeared mysteriously, and she had kept her faith during the long interval.

The miners removed the old lady to her house and that night her faithful spirit rejoined that of her long-lost lover.—Tit-Bits.

Not Joking.

Johnny was rather apprehensively awaiting his father's return from business. He had a curious little feeling that more would be heard about the broken panes of glass in old Grime's glasshouses.

"Take off your coat, my son, and come along with me," said pa, after he had rested from dinner.

"You're not going to give me a hiding, are you, pa?" inquired young hopeful, with a nervous gulp.

"I haven't seen Hemmandshaw for a week."

"No; he hasn't been out of the house since his accident."

"Was he seriously injured?"

"No; but he feels the disgrace deeply."

"Disgrace?"

"Yes. After living in the heart of the City all his life, he went to the country one day last week and was run over by a milk wagon."

"I am sorry to learn your mother is ill," said the sympathizing teacher to the little girl who had come in late. "Is she sick abed?" "Not quite," replied the truthful child. "She's just sick a-sofa."—Chicago Tribune.

A.C.C. COFFEE

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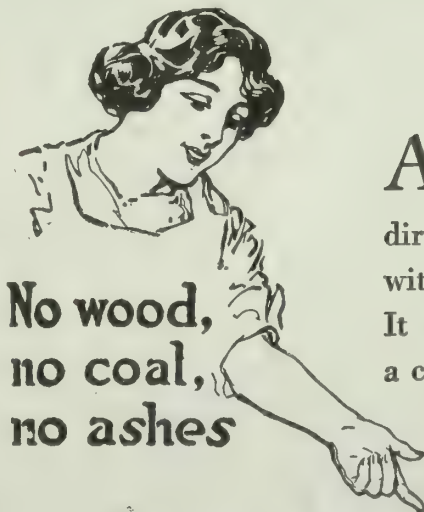
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no ashes

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Copies of "VACATION" may be had free at 874 Market street (Flood building), Sausalito Ferry Ticket Office, or on application to

J. J. GEARY, G. P. & F. A.,
808 Phelan Building,
San Francisco, Cal.

THE MARKETS.

San Francisco, June 24, 1914.
Unless otherwise noted, prices quoted are paid f.o.b. San Francisco.

Cereals.

WHEAT.

The only change in prices is a slight decline in northern Forty-fold. In general, the local market is rather firm, with little business, but no excessive supplies, most of the northern stock arriving being for the mills. Buyers are taking hold of the new crop slowly, and those in the North are using the California crop as a bear argument.

California Club, cti....	\$1.57½ @ 1.62½
Forty-fold	1.60 @ 1.65
Northern Club	1.57½ @ 1.62½
Northern Bluestem ...	1.62½ @ 1.65
Northern Red	1.62½ @ 1.60

BARLEY.

The speculative market is a little easier, but spot prices are fairly steady for desirable grain. Considerable stock has arrived at the Port Costa warehouses for export, but shipping prices have not been definitely established. Arrivals here are light, and consist largely of very ordinary grain, on which prices are maintained with difficulty.

Brewing and Shipping. Nominal	
Choice Feed, per cti....	\$0.92½ @ 0.97½
Common Feed	Nominal

OATS.

Offerings of red oats have increased somewhat, consisting to a large extent of inferior stock, which has caused a slight decline in this variety. White oats are unchanged and very scarce.

Red Feed	\$1.10 @ 1.20
Gray	Nominal
White	1.80 @ 1.35
Black Seed	Nominal

CORN.

California corn is hardly quotable, as none is coming into this market. Eastern stock is scarce and pretty steadily held. Some has arrived from the Orient, but the movement has not been sufficient to establish definite values.

California Yellow	Nominal
Eastern Yellow	\$1.80 @ 1.85
Eastern White	Nominal
Egyptian	1.85 @ 1.90
Milo Maize	1.80 @ 1.85

RYE.

This grain remains entirely nominal, with no demand and very little stock on hand.

Rye, per cti....	\$1.45 @ 1.50
------------------	---------------

BEANS.

All prices remain steady as last quoted, with little likelihood of further changes on old-crop stock. Supplies of all descriptions are very light in this market, with practically nothing whatever left in the country, and while there is some inquiry all the time, buyers are not getting any large quantities. Conditions are favorable for early offerings out of the new crop, which will come into a bare market. The crop outlook is still uncertain, as planting is still in progress, and the yield will depend on weather conditions for the next few months.

(On wharf.)

Bayos: Cal., per cti....	\$7.00 @ 7.50
Mexican	4.50 @ 5.00
Blackeyes	7.75 @ 8.00
Cranberry Beans	4.25 @ 6.00
Horse Beans	1.90 @ 2.15
Small Whites	5.00 @ 5.25
Large Whites	3.90 @ 4.50
Limas	6.50 @ 6.85
Pea	4.25 @ 4.50
Pink	3.75 @ 4.00
Red Kidneys	Nominal
Mexican Red	6.00 @ 6.25

SEEDS.

There is no movement of any consequence in any line, values being about steady on the old basis. Alfalfa is entirely nominal, with no demand and no large supplies of old stock offered.	
Alfalfa	12½ @ 15 c
Brown Mustard, per lb....	3¼c
Canary	7 @ 7½c
Hemp	2½ @ 3 c
Millet	2½ @ 2¾c
Timothy	7½ @ 8 c
Yellow Mustard	Nominal

FLOUR.

Values remain steady as for some time past, with a rather light demand.

Cal. Family Extras....	\$5.80 @ 6.20
Bakers' Extras	4.80 @ 5.40
Superfine	3.90 @ 4.20

Hay and Feedstuffs.

HAY.

Arrivals show a gradual increase, but are still far below the usual shipments for this time of year. There is plenty of new hay ready for shipment, but growers are busy with the grain harvest and show no hurry to move the hay. Moreover, market conditions are unfavorable, even the present light offerings being hard to dispose of. There is no speculative feature to the market, as there was last year, both dealers and consumers regarding conditions as unfavorable for large purchases. The proportion of new hay in the arrivals, however, is steadily increasing. The quality of new stock is inferior, and most of the new wheat hay sells around \$8 to \$11, volunteer going at \$5 to \$8. Buyers in the country are taking hold of the new hay very slowly. Alfalfa is also quiet, as large consumers are waiting for the later cuttings, the first cutting being very poor. Quotations are for old-crop hay.

No. 1 Wheat, or Wheat	
and Oats	\$11.00 @ 12.00
do No. 2	9.00 @ 11.00
Lower grades	8.00 @ 9.00
Tame Oats	8.00 @ 12.00
Wild Oats	7.00 @ 8.50
Alfalfa	7.00 @ 9.50
Stock Hay	5.00 @ 6.00
Straw, per bale.....	45 @ 60c

FEEDSTUFFS.

The general demand is rather light, owing to the abundance of natural feed, but values are held at the former level, some descriptions, especially bran, being scarce. Preparations are being made for a large increase in the production of alfalfa meal, but so far this has resulted in no marked drop in prices.

Alfalfa Meal, per ton....	\$17.00 @ 18.00
Bran, per ton.....	25.00 @ 26.00
Oatmeal Meal	34.00 @ 35.00
Cocoanut Cake or Meal..	26.00 @ 27.00
Cracked Corn	41.00 @ 42.00
Middlings	32.00 @ 34.00
Rolled Barley	21.50 @ 22.00
Rolled Oats	23.00 @ 29.00
Shorts	26.00 @ 27.00

Garden Truck.

VEGETABLES.

The local vegetable market is in rather poor shape this week, as the demand is lighter than it has been for some time, and supplies in several lines have been quite large. Offerings of tomatoes are increasing right along and Southern stock shows a further decline, though lug-box shipments from the delta district, which are beginning to appear in fair quantities, have been pretty well received. Southern bell peppers have dropped sharply, and are expected to be fairly plentiful from now on, eggplant also being lower. Green peas show a wider range, ordinary stock being hard to sell, though fair prices prevail for choice lots from the San Mateo coast. String and wax beans are plentiful and lower, and green limas are now selling at easy prices. Asparagus is considerably lower, most offerings being of inferior quality, and green corn is in rather excessive supply, resulting in easier prices.

Cabbage, per cti....	\$1.00 @ 1.25
Cauliflower, dozen	40 @ 70c
Green Peppers, lb.....	2 @ 8c
Carrots, per sack.....	35 @ 50c
Green Peas, lb.....	2 @ 4c
Tomatoes: Southern, crate	30 @ 40c
Delta, lugs	2.00 @ 2.50
Beans: Wax	2 @ 4c
String	2 @ 4c
Rhubarb, box	60c @ 1.00
Asparagus, box	75c @ 1.50
Cucumbers, box	65 @ 75c
Eggplant, lb.....	6 @ 7c
Green corn, sack.....	75c @ 2.00
Lima beans, lb.....	4 @ 5c

POTATOES AND ONIONS.

There is little new in this line locally, with good river stock coming forward in ample quantities, but not sufficient to cause any break in prices. Onions are steadily held, and Bermu-

das are still holding their place in the market. The Oregon market is said to be short of new potatoes, but supplies here are ample for current needs, and some are being shipped north.

Potatoes:

River Burbanks	\$1.00 @ 1.50
Garnets, lb.....	1½ @ 2c
New Potatoes, lb.....	1¼ @ 1½c
Oregon Burbanks	75c @ \$1.25
Sweet Potatoes, per cti....	2.50 @ 2.75
Onions: Bermuda, crate..	2.00 @ 2.25
New Red, cti.....	2.00 @ 2.25
Garlic, new, per lb.....	5 @ 8c

Dairy Produce.

POULTRY.

The poultry market remains in bad shape, with large offerings of young California stock, and a rather sluggish demand. Broilers and fryers are about the same as last week, but the market is overloaded with small hens, and roosters are lower.

Large Broilers	18 @ 19 c
Small Broilers, per lb....	18 @ 19 c
Fryers, per lb.....	20 c
Hens, extra, per lb.....	17 @ 18 c
Hens, large, per lb.....	17 c
Small Hens, per lb.....	15 @ 16 c
Young Roosters, per lb..	22 @ 23 c
Squabs, per doz.....	\$2.00
Geese, per pair	2.00 @ 3.00
Ducks, doz.....	6.50 @ 8.00

BUTTER.

Supplies are coming in freely from points up and down the Coast, with some shipments from Oregon, but are moving off in good shape. Values for the extra grade have shown no change whatever this week, and the lower grades, after a ¼c decline, have held steady at the new level.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24	24	24	24	24	24
Prime						
Firsts.....	23	23	23	23	23	23
Firsts	23	23	23	23	23	23

EGGS.

Extras have been fluctuating between 24½ and 25c all week, and at the moment are fairly strong, with active trading in the local market. The lower grades are a little easier, but the figures show little variation.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	25	25	24½	24½	25
Firsts	23	23	23	23	23	22½
Selected						
Pullets.....	22	21½	21½	21½	21½	21½

CHEESE.

Considerable Northern cheese has come in this week. California flats have been marked down a little, and Monterey cheese is considerably lower. Fancy California Flats, per lb...12½c New Young Americas, fancy....14½c Monterey Cheese

	Wed.	Thu.	Fri.	Sat.	Mon.	Tu.
Butter:						
Extras.....	25	25	25	25	25	25
Eggs	26	26	26	26	27	26
Cal. Cheese:						
Flats	13½	13½	13½	13½	12¾	12¾

Deciduous Fruit.

The demand for fresh fruits is rather light at present, but offerings of several of the leading lines have been running rather smaller than usual, and several varieties are higher. The berry market, however, has eased off again, everything but gooseberries being lower, and strawberries are very plentiful and easy. New apples in the Alexander and Astrakhan varieties are appearing, and move fairly well at the prices quoted. Apricots continue rather scarce, but the quality is better, and prices have advanced for both crates and lugs. Pears and plums are also a little higher at the top figure, while the general run of peaches are lower. Cherries stand about as before, with limited supplies and a fairly good demand. Supplies of figs are increasing, with lower prices. The figure below is for double-layer boxes, single layers selling at 40 to 60c. Supplies of cantaloupes are large, but prices show some improvement, while watermelons are not yet very plentiful.

Blackberries, chest	\$3.00 @ 4.50
Loganberries, chest	2.00 @ 4.50
Raspberries, chest	4.00 @ 7.00
Gooseberries, lb.....	4 @ 10c

Strawberries:

Malindas, chest	2.00 @ 4.00
Banner, chest	2.25 @ 4.00
Longworth	2.50 @ 4.00

Apples, New Crop:

Astrakhans, box	60c @ 1.50
Alexanders	75c @ 1.25
Apricots, crate	75 @ 90c
do lugs	1.00 @ 1.25
Pears, box	50c @ 1.00
Peaches, crate	50 @ 75c
do basket	40 @ 85c
Plums, crate	50 @ 85c
do lugs	1.00 @ 1.25

Cherries:

Black, box	75c @ 1.00
Royal Anne, box.....	75c @ 1.00
Figs, Black, box.....	85c @ 1.00
Currants, chest	6.00 @ 8.00
Cantaloupes, crate	1.25 @ 1.50
Watermelons, lb.....	1½ @ 2¼c

Dried Fruits.

The dried-fruit trade continues rather quiet, both here and in consuming markets, as buyers are inclined to await further developments before increasing their holdings, while growers show no disposition to hasten the marketing of the crops. A good deal of fruit is still being bought at the figures quoted, but there seems to be no very urgent demand. The distributing trade has been taking more interest in raisins, owing to concessions made by some outside packers; but it now appears that no great quantity can be had at the low prices that were put out. The new crop, from most accounts, promises to be large, but it is too early to make predictions. The prune crop in some sections is said to be in a little better shape than was expected, which tends to delay the buying movement, though it does not seem likely that the situation will be materially changed. Peaches show little strength, as the crop is turning out well, the demand for the fresh fruit is nothing extra, and neither spot nor future dried peaches receive much attention from buyers. Apricots are holding firm, but the movement is light, as the trade is awaiting the result of the drying season. The New York Journal of Commerce says:

Although some business is said to have been put through at the cut prices on future California raisins, it is stated on good authority that most of the orders sent out from here at 5¼c. for choice and 6¼c. for fancy seeded muscats in 16-ounce cartons have been turned down by packers who were said to be soliciting business on this basis. Just why they have changed their views is not stated, but the impression prevails that the prices were not made with a view to getting business but in order to sound the trade. The Associated Company has not yet put out quotations on new crop and is maintaining its prices on old. In California prunes on the spot little is being done at present, but in view of the prospect of a short crop this year holders are not anxious to sell on the basis of current spot market quotations. Little is left of the old crop on the Coast and for what remains the holders want prices close up to the present basis of quotations ex store New York. In future California prunes the movement is slow and prices are unchanged. Crop estimates are increasing, some of them now indicating a probable output of 130,000,000 pounds.

Peaches are neglected by local buyers and there seems to be no present demand from this quarter, and there is little demand for spot or future apricots from the Eastern trade.

Evap. Apples, 1914.....	Nominal
Apricots, 1914	9 @ 9½c
Figs: White, 1914	3¼c
Black	Nominal
Calimyrna, 1914	4½c
Prunes, 4-size basis, 1914..	5½ @ 6½c
Peaches, old and new....	4 @ 4½c
Pears	Nominal
Raisins (in sweatbox):	
Loose Muscats	4 c
Thompson Seedless	4½c
Seedless Sultanias	4 c

Citrus Fruits

The San Francisco demand for all lines of citrus fruits is light, but values have been well maintained. Supplies of navel oranges are diminishing, and this variety has been marked up a little, while Valencia's

are in fairly good supply, and show no change. Lemons are firmly held as before, but local business is quiet.

With the exception of Valencias there was very little change in the Eastern orange markets, over a week ago, and nothing in the way of high prices is anticipated until the field is cleared of the present heavy supplies of melons, berries and deciduous fruits. Navels, Seedlings, Sweets and St. Michaels are rapidly cleaning up although not attractive.

Valencia shipments have been liberal for so early in the season, and reports from the East state that the prospects for a good Valencia market are very bright, although the estimates of a 11,000 car crop will naturally have a bearing on the prices.

Fourteen and a half cars of Valencias sold on the New York auction, June 22, for an average of from 80c. to \$2.05 and 31 cars of navels sold for an average of from \$1.25 to \$2.95. No navel quotations were given on the Philadelphia market for that date, Valencias being quoted on an average of from \$1.80 to \$3.05.

A carload of lemons sold on the Pittsburgh market for an average of \$4.10 to \$5, this being somewhat better than prices in St. Louis at that time.

Shipments to date from southern California have been 30,343 cars of oranges and 2083 cars of lemons as against 24,379 cars of oranges and 4065 cars of lemons, two years ago.

Oranges: Navels, box....\$ 1.25@ 2.50
Valencias, box 1.75@ 2.50
Tangerines, crate 75c@ 1.25
Grapefruit, seedless, box. 1.50@ 2.50
Lemons, box 2.75@ 5.50
Limes, case 9.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

New almonds stand nominally as before, the prices having been made by early purchases. Prices have not been set on the bulk of the crop. Conditions in the walnut districts are said to be good, but values will not be established for some time.

Almonds, 1914 crop:
Nonpareils 17 c
I X L 16 c
Ne Plus Ultra 15 c
Drakes 13 c
Languedoc Nominal
Hardshells Nominal
Walnuts, new crop:
No. 1 Softshell Nominal
No. 1 Hardshell Nominal
Budded Nominal
No. 2 Nominal

HONEY.

Local prices stand about as before, with a very moderate demand. Offerings are large, and are not moving readily, though good sized shipments are going from producing points to other markets.

Comb: White 12 @13 c
Amber 10 @11 c
Dark 8c
Extracted: White 7 @ 8 c
Amber 4½ @ 6 c
Off Grades 3 @ 4 c

BEESWAX.

Light 30 @32½c
Dark 28 c

HOPS.

Trading continues rather quiet in this market, as the poor condition of the vines in Sonoma county has disturbed conditions a little, and buyers are waiting for more definite knowledge as to the output. Values are still within the former range.

1913 crop 15 @17½c
1914 crop 14 @15½c

Live Stock.

The California ranges are still being replenished by purchases in other districts. A good many sheep and lambs are being bought in Oregon for the northern California ranges. The local market remains rather firm in most lines, as shippers are in no hurry to dispose of their stock.

Steers: No. 1 7 @ 7½c
No. 2 6½ @ 7 c
Cows and Heifers: No. 1. 6 @ 6½c
No. 2 5½ @ 6 c
Bulls and Stags 3½ @ 5 c
Calves: Light 8½ @ 9 c
Medium 8 @ 8½c
Heavy 7 @ 8 c

Hogs: Grain-fed, heavy... 8 c
150 to 250 lbs..... 8½c
100 to 150 lbs..... 8½c
Prime Wethers 5½ @ 6 c
Ewes 4½ @ 5½c
Milk Lambs 7 @ 7½c

DRESSED MEATS.

Steers 11½ @12 c
Heifers 11 @11½c
Veal, large 13 @14 c
Small 15 @15½c
Mutton: Wethers 11 @11½c
Ewes 10 @10½c
Suckling Lambs 14 @14½c
Dressed Hogs 13½ @14 c

WOOL.

Most of the Pacific Coast wool has been sold, bringing comparatively high prices. It is believed in some quarters that the present level will not long be maintained, but there is no evidence of weakening in the larger buying markets as yet.

San Joaquin 12 @14c
Humboldt and Northern....16 @21c
Calaveras 14 @18c

HIDES.

Offerings continue very light, keeping prices well up to the former high level, though no very large demand is reported by local dealers.

Heavy Steers, over 56 lbs.15 @15½c
Medium 15 @15½c
Light Steers, under 48 lb. 15 c
Heavy Cows, over 50 lb.15 @15½c
Light Cows, 30 to 50 lb.14½ @15 c
Kip 15½ @16 c
Veal 18 @19 c
Calif 18 @19 c

HORSES.

Another large shipment is being sold at auction locally this week, and the market appears in somewhat better condition. Part of the present offering consists of chunks and drafters, for which there is always some demand. The strongest buying movement, however, is in sound, well-broken stock, that can be put to work immediately in the country, green range horses finding little demand. Prices in all lines have been marked down considerably, as recent sales have shown that the former figures could seldom be realized, though there is a wide range in prices, according to quality and appearance.

Heavy drafters, 1700 lbs. and over\$225@275
Light Drafters, 1500 to 1650. 200@225
Chunks, 1350 to 1500 180@200
Wagon Horses, 1250 to 1350.. 125@175
Green Mountain Range..... 90@125
Delivery Horses, 1050 to 1250 75@100

MULES.

1200 lbs.\$150@200
1100 lbs. 125@150
1000 lbs. 100@125
900 lbs. 65@100

SPECIAL DECIDUOUS MARKET REPORT.

[Written for the PACIFIC RURAL PRESS by J. L. NAGLE.]

The advance of the season over last year has been particularly noticeable this past week, due to the early arrival of Burbank plums and other varieties, which ordinarily are not ready for shipment until after the 4th of July. Bartlett pears are ready for shipment and the carlot movement of this variety will be heavy about the latter part of this week. Cars leaving not later than the 23rd will arrive in the east in time for the 4th of July trade and the demand from all sections of the country is noticeably active.

Serious competition from eastern fruits is being felt from Georgia only and this is limited practically to the Seaboard markets. Local fruits, however, in the Middle West and southern States are commencing to appear upon the market and will be the cause of the curtailment of orders to a limited extent for the next three weeks.

The first shipment of Thompson seedless grapes is expected to leave the Coachella Valley within the next two or three days. This will be followed up shortly by Malagas from the Coachella and Imperial districts, and indications are that the crop of Malagas from the Fresno district will also be early.

Mildew is reported as being heavy on Tokays in nearly every section, due to the unseasonable weather in the late spring.

Canners have appeared active re-

garding Cling peaches within the last few days, liberal offers being made on Midsummers and Phillips with a few inquiries for Levis.

The markets for the past week ranged as follows:

Chicago—Royal Cots 65c@\$.05; Alexander 74c@\$.08; Clymans 84c@\$.160; Royal Annes 79c@\$.120; Tragedys \$1.40@2.45; Climax \$1.07@1.71; Burbank \$1.10@1.57; Triumph 60c@\$.155; Bings \$1.38@1.74; Republican \$1.17@1.43; B. Oregon 71c@\$.105; Formosa \$1.25; Comets \$1.75; Red June \$1.20@1.70; Red Astrachan \$1.35; Abundance 98c@\$.153; Simoni \$1; Hales 68c@84c; Santa Rosa \$1.07 @1.43.

New York—Royal Cots 75c@\$.125; Alexander 96c@\$.120; Clyman \$1.20@1.30; Royal Annes \$1.15@1.30; Tartarians \$1.43; Tragedys \$1@2.15; Climax \$1.35@2.12; Burbank \$1.20@1.65; Triumph \$1.03@1.45; Bings \$1.60; Republican \$1.50@1.88; Formosa \$1.33@1.90; Comets \$1.60@1.80; Red June \$1.10@1.40; Abundance \$1.40; Santa Rosa \$1.50@2; Shiro \$1.30; Simoni \$1.30@1.50; Moorpark \$1.20; Wilders \$1.45; Lawson, boxes, \$3; half boxes, \$1.60.

Shipments of deciduous fruits from Sacramento, June 23, were: 3 cars of cherries, 2½ cars of apricots, 12 cars of peaches, 26½ cars of plums and one care of pears. This brought the total shipments to date up to 1378 cars as against 735½ cars at this date last year.

PUBLISHER'S DEPARTMENT.

TO MEET WEAR AND TEAR.—Louis F. Scribner of Pasadena, the well known grower of small fruits, writes as follows: "Please send a copy of your new edition of California Fruits. We purchased a copy many years ago and it is nearly worn out."

THE VALLANCE NURSERY.—C. C. Morse & Co. announce that they have turned

over the nursery part of their business to the Vallance Nursery of Oakland. Their nursery has always been operated as a separate and distinct department, and it has been ably managed by John Vallance and his brother, James Vallance, both experienced nurserymen, who for twenty-five years have been engaged in high class business in California. The Vallance Nursery has its headquarters at 81 Glen Avenue, Oakland, on the same premises which are well known for seven years as Morse's Nursery. The senior John Vallance is now at a Pacific Coast nurserymen's convention in British Columbia. He is vice president of the California Association and hopes to bring all the nurserymen of the continent to meet with the Panama-Pacific Exposition next year.

Owing to the heat in some of the valleys, several of our subscription men have sought cool spots and are taking a vacation. For this reason we went below our average on new subscribers and can only report 172 for the week.

This office is in receipt of a book entitled, Management and Feeding of Sheep, that has just been issued by the Orange Judd company, 315-321 Fourth avenue, New York. The book is written by Thomas Shaw, author of Feeding Farm Animals, The Study of Breeds, etc., and fills a long felt want on the part of the farmer, flockmaster and student of agriculture. The book contains 500 pages, is nicely illustrated, bound in Buckram, and sells for \$2.

The demand for Prof. Wickson's latest work "One Thousand Questions in California Agriculture Answered" is as brisk as ever. We want every farmer in California to own one. He will find it very useful for any branch of farming. The price is \$1.50 postpaid; but to our paid-in-advance subscribers we are making a special offer. Write for it.

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From January to June, 1914

	Pa-
utility	654
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Preserving wood	299
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